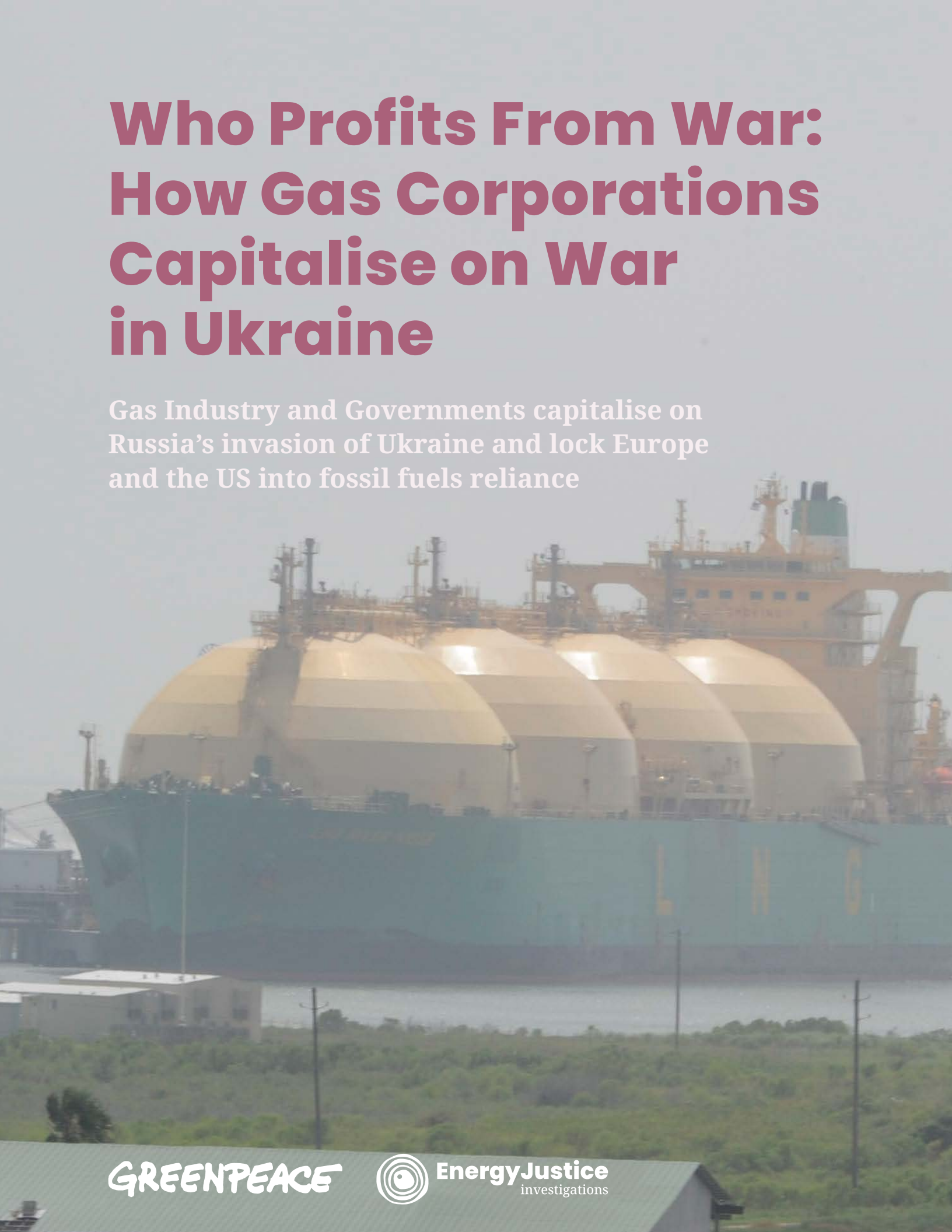
Who Profits From War: How Gas Corporations Capitalise on War in Ukraine

Gas Industry and Governments capitalise on Russia's invasion of Ukraine and lock Europe and the US into fossil fuels reliance



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"The gas industry is using today's news — the war and the energy crisis — to try to lock in more gas for decades, even though the industry knows it'll be disastrous for the climate and international stability."

— Ben Franta

Greenpeace is an independent campaigning organization that uses peaceful protest and creative communication to expose global environmental problems and to promote solutions that are essential to a green and peaceful future.

Executive Summary

Who Profits From War – How Gas Corporations Capitalise on War in Ukraine

Gas Industry and Governments capitalise on Russia's invasion of Ukraine and lock-in Europe and the US into fossil fuels reliance

The 2022 Russian invasion of Ukraine shocked the world. It quickly resulted in an energy crisis as European States tried to secure non-Russian energy supplies for the winter.

What followed was one of the most blatant examples of 'shock doctrine,' where gas operators quickly shifted their public messaging and lobbying from "energy transition" to "energy security" and cynically used the opportunity to frighten governments into massive, unneeded investment into and expansion of fossil gas imports and infrastructure. These tactics have resulted in a short-term energy supply crisis being answered by long-term fossil fuel lock-in in the form of new infrastructure, decades long contracts, and environmental impact in the US, as well as in the EU. This overreaction jeopardises the EU's and US' energy transition and their agreed climate goals.

The shift was instant and effective. The REPowerEU plan, the EU answer to the gas crisis, included around €10 billion ($20.9 billion) in funding for gas infrastructure.[1] Eight liquefied gas terminals are under construction, and 38 more have been proposed.[2]

Replacing Russian pipeline gas led to a surge of shipments of liquefied gas (also known as LNG) from the US. As a result, gas infrastructure operators, portfolio traders, and gas companies have declared that imported liquefied gas is the answer to the crisis and will remain so for decades to come. This LNG expansion threatens the health of communities living near these export terminals, extraction sites, and pipelines, while potentially pushing planet warming emissions past levels to meet global climate goals.

Shareholders of the world's top five oil and gas companies saw record profits of €192 billion ($209 billion)[3] and distributed $102 billion (€93 billion)in the form of dividends and share-buy-backs in 2022.[4]

Why The Gas Is Not Needed

KEY FINDINGS

- Gas companies are capitalising on the shock of the Russian invasion of Ukraine to weaken regulations and push new proposals for increasing liquefied gas imports and locking both the US and Europe into contracts that would last for 15 to 20 years. This threatens climate goals, communities and investors.
- The reality is that most of the proposed projects would not be operational in time to address short-term energy shortages arising from the war in Ukraine. Most projects will only come online by 2026, far too late to respond to the current supply crunch.
- The US has approved projects that, if built, would double liquefied gas export capacity to 439 bcm per year – with annual lifecycle emissions equivalent to 393 million cars.[5] By 2030, US liquefied gas exports alone could exceed the Net Zero Emissions (NZE) estimate by the IEA for *global* liquefied gas trade.[6]
- US liquefied gas imports to Europe increased by 140% in 2022.[7] France accounted for nearly a quarter of these imports, with the UK and Spain following closely. At the same time plans for a raft of new import terminals are being pushed through.
- Currently in Europe eight liquefied gas terminals are under construction and 38 more have been proposed. These terminals, if built, would add 950 million tonnes of CO2-eq per year.[8]

- Despite this massive surge in imports and infrastructure plans, EU liquefied gas regasification utilisation rate was only 63% in 2022.[9]
- European climate change policies should include phasing out liquefied gas before 2030 and all fossil gas by 2035.

A Fossil Fuel Disaster

The EU's energy crisis has been driven by the short-term need to get off Russian oil and gas. But this scenario ignores the much larger existential crisis of climate disruption. The climate protection pathways consistent with keeping the average global temperature increase to below 1.5°C (2.7°F) show that Europe must phase out gas consumption by 2035[10]. We need to get off all gas, not just that from Russia.

Despite this, European States have announced plans for an additional liquefied gas import capacity of 227 bcm per year over the coming years[11] – more than doubling existing capacity.[12]

The US has similar ambitions with approved projects that could more than double US export capacity and many more are proposed.[13] This proliferation of US export terminals has been mostly financed by European banks,[14] and made possible by negotiating long-term supply agreements with European purchasers and portfolio traders.[15]

This buildout is irrelevant to Europe's real short-term needs. Without any extra measures, the US can already increase its liquefied gas exports to Europe as a temporary measure to cover a short-term supply crunch.[16] Any liquefied gas terminal coming online in 2026 or later does not help the current crisis – although it will make the climate crisis much worse and will, of course, increase profits of fossil fuel companies.

Who Pays The Price?

In 2022, while the world was recovering from Covid-19 and facing multiple wars, famines and other climate-related catastrophes, the big five energy companies (BP, Chevron, Exxon, Shell and TotalEnergies) generated €192 billion ($209 billion) in record profits[17]; roughly twice what they made in 2021.[18]

Around the world, families were forced into poverty, government subsidies were announced, and aid packages were offered. In the EU reportedly 71% of people cut back on food and everyday items,[19] and in the US a quarter of poll respondents said they had forgone necessities like food or medicine to pay their energy bills.[20]

This LNG expansion also has substantial health and safety impacts on communities. European countries have banned methods like fracking at home,[21] yet encourage these methods in the US to satiate their energy demand. The extraction and transporting of liquefied gas in Texas, New Mexico, and Louisiana has resulted in worsening air quality, contaminated water, and increases the risk of respiratory diseases, birth issues, and cancer in these communities, many of which are predominantly Black, Brown, Indigenous, and have low incomes.[22]

Breaking the Climate

Investments in pipelines, terminal infrastructure and long-term contracts are all forms of "carbon and methane lock-in" that will make it harder politically, economically, and socially to decarbonize. Liquefied gas has higher lifecycle greenhouse gas emissions than pipeline gas. According to the Global Energy Monitor, if the EU LNG terminals that are under construction or proposed start production would result in 950 million tonnes of CO2-eq per year from these terminals.[23]

The environmental and climate impacts of these contracts makes them contentious which has resulted in a swathe of greenwashing on both sides of the Atlantic such as gas "certification" schemes[24], "hydrogen ready" rhetoric,[25] and repeated claims of "clean energy". As this report shows, liquefied gas is not "clean", "needed" or "wanted".

While it will take significant work and investment to achieve the change needed, reality shows[26] that reducing demand together with increasing energy efficiency and ever cheaper renewable sources is the clear way forward.

It is equally clear that the liquefied gas buildout being foisted upon the US and Europe is a long-term disaster rather than a short-term solution.

Outsourced hypocrisy

One of the most outrageous features of the liquefied gas boom is its source. US liquefied gas comes mainly from fracking.[27] Many of the European banks that are financing US liquefied gas terminals have policies that exclude fracking from their banking activities. The case study in this report, identifies that all but one of the banks involved have such a policy.[28] And almost all the European countries that are importing US liquefied gas have banned fracking on their own land.[29] That's because a growing body of research has associated proximity to oil and gas activity with health problems[30] such as respiratory impacts (e.g. asthma),[31] cancer,[32] poor birth outcomes,[33] and more.

In the US, all the operating and under-construction terminals except one are located near a "disadvantaged community" as determined by the Sierra Club.[34]

A compendium of scientific and medical research on the impacts of fracking in the US summarised its findings by saying, "Our examination uncovered no evidence that fracking can be practised in a manner that does not threaten human health directly and without imperilling climate stability upon which public health depends."[35]

Data from the US EPA's Air Toxics Screening Assessment shows that 236 counties with a total population of 14 million "face cancer risk exceeding EPA's one-in-a-million threshold level of concern, just due to oil and gas pollution."[36]

In the words of John Beard, a community advocate in the Port Arthur area: "*Europeans shouldn't think gas exported from my community is 'freedom gas'. Nothing's really free... It's going to cost you. It's going to cost you more and it's going to cost you in the long run. Because the more you use it, the more peril it places on your life and health, and the life and health of people across this entire planet. Climate change is real.*"[37]

Recommendations

Phasing out fossil fuel exports from the US must be paired with strong demand-side policies to end fossil fuel use in Europe and other importing markets. Stopping the expansion of gas requires strong policies both to reduce harms where drilling occurs and all along the supply chain to decrease the demand for gas and incentivize the rapid buildout of renewables.

For Europe:

CHANGE THE SYSTEM

1. Remove fossil fuels from politics, by: ending their access to decision-making; ending conflicts of interest; excluding fossil fuel industry representatives from climate negotiations; rejecting partnerships with the fossil fuel industry.
2. Revoke the privileged role of gas lobby group ENTSOG in EU decision-making processes.
3. Ensure full transparency on all available data on gas flowing into, through, and out of the EU.
4. Further strengthen, adopt and enforce due diligence legislation at European and nationals levels.

PHASE OUT GAS

1. Set mandatory gas reduction targets at EU and national levels,
2. Set targets for climate neutrality by 2040 in the EU and the US,
3. Pursue an active fossil gas phase-out by 2035. Due to its higher carbon intensity and risk of methane leaks, imports of LNG should be phased out first.
4. Cancel all projects for the construction of new LNG import terminals and expansion of existing terminals
5. Halt new long-term contracts for the delivery of LNG, and ban extension of existing contracts.
6. Properly account for the higher lifecycle emissions of LNG compared to pipelined gas.
7. Critically assess hydrogen projections and projects pushed by the fossil fuel industry.

REDUCE CONSUMPTION, BOOST EFFICIENCY AND EXPAND RENEWABLE ENERGY

Policies and measures are needed to support urgent measures that provide the services required from energy but do not rely on fossil gas through rapid expansion of systems and mechanisms that reduce consumption, expand efficiency and renewable energy sources.

Energy Saving and Conservation measures to reduce demand:

Efficiency (incl. insulation) - in Building and Industry: Renewable heating (like heat pumps); Building renovation heater efficiency in buildings; efficiency in industrial processes.

1. Financial support schemes for vulnerable people to meet their basic energy needs
2. Ban disconnections e.g. energy providers should not have the right to cut off customers who fail to pay their bills, in particular vulnerable ones
3. Drive deep building renovations and sufficiency that can realise the potential to permanently cut demand by improving the energy performance of buildings.

Power production – Maximise measures for renewable power sources at all public, commercial, and industrial sites and operations. E.g. solar panels on rooftops, install heat pumps and undertake renovation measures.

Industry – where possible be fully electrical and more circular, while always prioritising energy saving

Tax fossil fuel profits: to help meet the investment needs of the energy transition, ensuring the burden does not fall on citizens and the rest of the economy.

For the US:

US policy makers must take the following steps to align LNG exports with strong climate goals:

1. Stop approving permits for any **new infrastructure** projects that would increase GHG emissions or worsen the climate crisis. This requires that any new pipelines or new LNG export terminals be rejected.
2. Reject federal approval for any LNG export **shipments from existing or approved terminals** that are inconsistent with 1.5°C pathways, worsen domestic energy poverty, or pose health threats to nearby communities.
3. President Biden must wield his global leadership and support ending international public finance for fossil fuels, including LNG, at the G7, G20 and COP28.

Both Biden and Congress must take further steps to protect the climate and communities living on the fence lines of the fossil fuel supply chain. Such policies include:

1. Establish a national plan and targets to wind down existing fossil fuel production and infrastructure.
2. Eliminate federal fossil fuel subsidies.
3. Ban new fossil fuel leasing and permitting on public lands and waters, and phase out existing leases.
4. Enact regulations to eliminate methane emissions and flaring from oil and gas facilities.
5. Require air and water pollution reductions in polluted communities by implementing a comprehensive “No Pollution Hotspots” policy.
6. Pass the Environmental Justice for All Act to provide legal remedies to citizens, improve equity mapping tools, expand grant programs, and strengthen consultation with impacted communities.
7. Build on the renewable energy incentives in the IRA to enact a Green New Deal that will direct trillions of dollars in public investments to create millions of green union jobs, rectify past injustices, and ensure that energy-dependent workers and communities are left better off through the transition.

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List of abbreviations

ACER - European Agency for the Cooperation of Energy Regulators
BCM - Billion Cubic Metres
BUILDER - Building United States Infrastructure through Limited Delays and Efficient Reviews
DESFA - Hellenic Gas Transmission System Operator (company based in Greece)
DoE - Department of Energy (US)
EACOP - East African Crude Oil Pipeline
EIA - Energy Information Administration
EIG - Global Energy Partners (company based in US)
ENTSOG - European Network of Transmission System Operators for Gas (EU)
EPA - Environmental Protection Agency (US)
EU - European Union
FERC - Federal Energy Regulatory Commission (US)
FID - Final Investment Decision
FSRU - Floating Storage and Regasification Unit (FSRU)
FSU - Floating Storage Unit
GHG - Greenhouse Gas
GIE - Gas Infrastructure Europe
IEA - International Energy Agency
IEEFA - The Institute for Energy Economics and Financial Analysis
IPCC - Intergovernmental Panel on Climate Change
IRA - Inflation Reduction Act (US)
IRENA - International Renewable Energy Agency
LNG – Liquefied Natural Gas
MARAD - Maritime Administration (US)
MTPA - Million Tonnes Per Annum
NOx – Nitrogen Oxides
NZE - Net-Zero Emissions
PA-CAN - Port Arthur Community Action Network (US)
PCI - Projects of Common Interest (EU)
PM2.5 – Fine Particulate Matter
RRF - Recovery and Resilience Facility (EU)
TAP - Trans Adriatic Pipeline
TEN-E - Trans-European Energy Infrastructure (regulation)
TYDP - Ten-Year Development Plan
US – United States of America
VOCs – Volatile Organic Compounds

The research methods and more clarification on the used databases can be found in Annex 1.

Introduction

The unprecedented energy crisis the world is facing has been analysed through many different lenses. Geopolitical shifts, market shifts, social crisis, record corporate profits, industry lobbying, regulatory changes and forecasts. In all these reports and briefings, one crucial group of industry actors continues to stay under the radar: fossil gas infrastructure operators. These middle men of the gas industry are often considered to be mere executors: they build pipelines and terminals, to be used by other - key - actors of the fossil industry. Pascal De Buck, the CEO of Fluxys - one of the largest gas operating companies in Europe - states it clearly: they have little responsibility, they are not the ones deciding, controlling, or pushing for gas contracts.[38] If anything, gas operators have been praised for their role in tackling the current energy crisis, serving the common good by developing the infrastructure that will keep us warm throughout the coming winters.

Our analysis will debunk these misconceptions. We will show that gas operators are driving the expansion of the gas industry and risking increased catastrophic climate impacts. We will also inspect the plans they put on the desks of decision-makers, showing these are not based on a rigorous assessment of the current situation, but constitute irrational proposals which, if fully implemented by our representatives, would lead us to miss our climate targets while shifting the bill onto citizens.

We will focus on the biggest geopolitical shift in the fossil landscape: Europe's detachment from Russia and its new reliance on the United States of America. We will analyse gas flows, contracts, finances, infrastructure expansions, emissions, regulatory changes, political agreements, and industry lobbying. We will confront all of this with the data that should have been the basis for the steps and decisions taken in 2022-23. We will also give a platform to the communities fighting against this fossil fuel invasion of their lands and, through their battles, defending a sustainable future for us all. We will illustrate global trends and figures with concrete examples on both sides of the Atlantic.

In the US, we will highlight the export terminals delivering the most gas to Europe: especially Sabine Pass LNG, owned by Cheniere, which is the biggest export terminal in the US.[39] The petrochemical and fossil fuel industry continues to sacrifice the health and safety of communities on the US Gulf Coast by ramping up the build-out of fossil fuel infrastructure. In Europe, we will focus on Dunkirk LNG, owned by Fluxys, which is the second-largest LNG terminal in continental Europe and the prime entry-point of US gas to Europe. We will uncover the plans of Fluxys and show that, far from being follow-up plans, they are both executive and inconsiderate.

LNG: an introduction

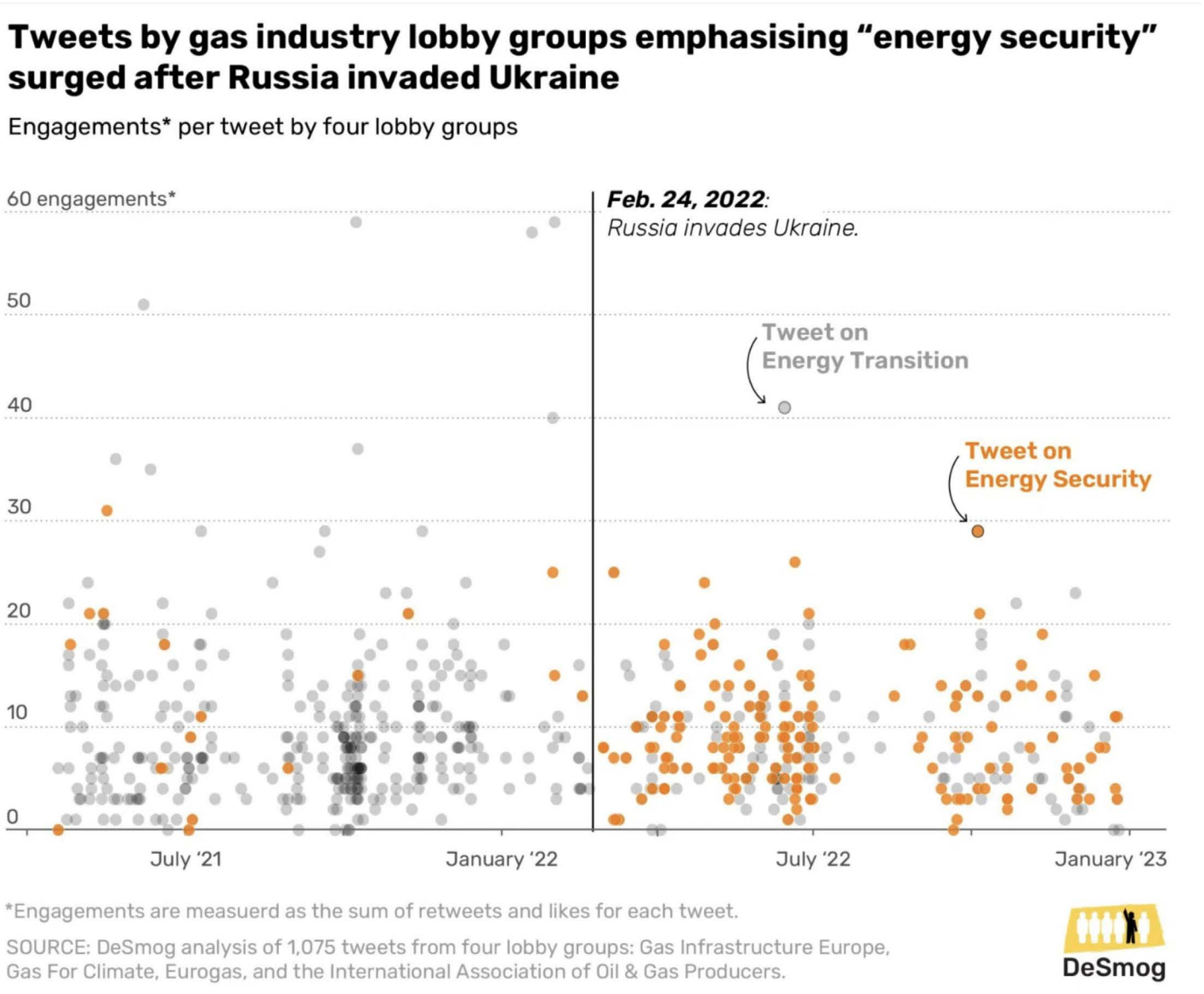
Liquefied Natural Gas (LNG) is fossil gas, mostly methane, that has been cooled down to its liquid state for ease of transportation and storage. Unlike pipeline gas, LNG is usually transported over long distances using highly specialised tankers. The liquefaction process reduces the volume of fossil gas by a factor of around 600, by keeping it at extremely low temperatures. However, LNG liquefaction, transportation and regasification require a significant amount of energy, resulting in a higher carbon footprint compared to pipeline gas. LNG can be up to 4 times more CO2 intensive than pipeline gas in the EU.[40] LNG sourced from fracked gas in parts of the US is among the most environmentally destructive sources of fossil energy in the world.[41]

Gas operators pushing for shock "solutions"

Once it was clear that Europe would undergo a major shift as a consequence of the Russian invasion of Ukraine, the gas operators (see our box "Gas operators leading the dance") started an intense lobbying blitz to ensure this shift reflected their priorities. This blitz was a classic example of the "shock doctrine," described by Naomi Klein as "*the brute tactic of systematically using the public's disorientation following a collective shock—wars, coups, terrorist attacks, market crashes, natural disasters—to push through radical pro-corporate measures, often called 'shock therapy'.*"[42]

An investigation by DeSmog, who analysed the narrative shift of four big industry groups throughout 2022, among which gas operators play a strategic role.[43] These groups, led by Gas Infrastructure Europe (GIE), a lobby group representing the interests of gas operators, moved their discourse away from 'energy transition' to 'energy security.'

Figure 1: The narrative shift from "energy transition" to "energy security" by gas industry lobby groups



Credit: Data visualisation by Youyou Zhou

Source: DeSmog

Whereas posts emphasising energy security, or the prospect of an energy shortage or crisis, accounted for about three percent of the tweets from these industry groups in the 10 months prior to the invasion, according to DeSmog's findings, that proportion shot up more than tenfold after the war started, with messaging related to energy security appearing in about a third of tweets from late February to December.

To Ben Franta, senior research fellow at the Oxford Sustainable Law Programme, the purpose of this narrative shift is obvious: "The gas industry is using today's news — the war and the energy crisis — to try to lock in more gas for decades, even though the industry knows it'll be disastrous for the climate and international stability."[44]

This shock doctrine was also pushed onto the desks of European decision-makers. On 4th May 2022, two weeks before the European Commission published REPowerEU - launched to find solutions to move away from Russian fossil fuels[45] Gas Infrastructure Europe (GIE) prepared a shock package for REPowerEU. It also reportedly lobbied the European Commission on the topic.[46] Its "solutions" are presented as "Making REPowerEU successful with gas infrastructure."[47] This shock plan argues for the need to invest in LNG infrastructure, multiply LNG terminals for "European security of supply," put in place a "fast-track approval procedure" for planned and future LNG projects, multiply pipelines to connect those terminals and "accelerate investments in infrastructure." The link with fear and confusion is also very well illustrated in GIE's long paper:[48] the geopolitical shift led to the "need for security" to replace "climate" on top of the pyramid of key factors in the energy market. "The balance of the EU Energy Trilemma has to be refunded," it states explicitly.

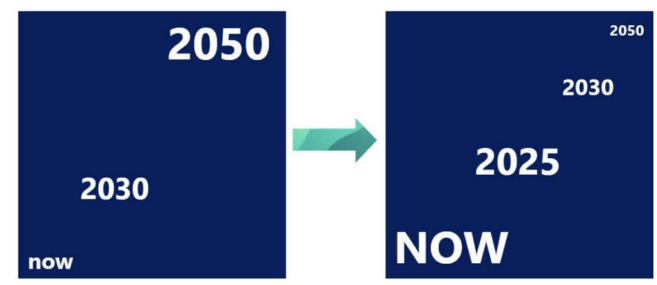
Furthermore, GIE argues that focus on 2050 and our climate targets, should be replaced by the "now", stating "The extreme energy prices of last year, and the current threats to security of supply require a focus on the shorter term."

ENTSOG (see our box "Gas operators leading the dance") who is, in the provisions of REPowerEU, responsible for "identifying gaps in the gas infrastructure" is also pushing for additional gas infrastructure, even though such infrastructure will not alleviate the short-term energy crisis. As a result, €10 billion have already been allocated to replace gas infrastructure orientated towards Russia,[49] and the procedures for PCI (Projects of Common Interest, see our box "Gas operators leading the dance") approval and environmental impact assessments have reportedly been accelerated.[50]

Figure 2: The EU Energy Trilemma

Source: Gas Infrastructure Europe[51]

Figure 3: The shift from long term planning to short term focus



Source: Gas Infrastructure Europe[52]

Gas operators leading the dance

Gas operators, who build, maintain and operate pipelines and LNG terminals, play a major role in the perennity and expansion of the fossil fuel industry. They are driving the market, predicting future "needs," advising the European Commission on these and securing public money for their members to build the infrastructure they proposed.

Figure 4: European map of infrastructure for gas – PCIs and additional projects identified through REPowerEU, including hydrogen corridors.

Source: REPowerEU[53]

That is precisely the purpose of the European Network of Transmission System Operators for Gas (ENTSOG), which was created in 2009 by the European Commission itself and brings together 45 gas operators.[54] ENTSOG would go on to shape the future gas market of the European Union and demand public money to finance the plans of its members.

The lobby group got a launching platform in 2013 when, to put an end to purely national strategies about gas pipelines and terminals, the European parliament voted on the Trans-European Energy Infrastructure (TEN-E) Regulation.[55] The objective was to develop a common European approach on infrastructure planning based on regional cooperation with Member States. This came with the identification of "projects of common interest" (PCI) - projects serving European citizens across borders - which would benefit from European subsidies, and which were based on a PCI list renewed every two years. The European Commission appointed ENTSOG to lead this new mission: the PCI list is compiled on the basis of a bi-annual report written by ENTSOG,[56] who then submits its estimations in terms of future needs to its members, who in turn assess how much should be invested in the pipelines and terminals they will "have to" build. This list is then sent to the Directorate-General Energy,[57] developing the EU energy policy, who gathers representatives of Member States, ENTSOG and gas operators to decide on the final list.[58]

As Pascoe Sabido, researcher at Corporate Europe Observatory notes:[59] "*There could not be a more obvious conflict of interest. Unsurprisingly, the group has consistently overestimated*[60] *future gas demand; as a result, between 2013 and 2020 the EU spent €4.5 billion on 44 new gas infrastructure projects, with 90 per cent of the money going to ENTSOG members.*"[61] Also the European Agency for the Cooperation of Energy Regulators (ACER) draws this logical conclusion: "*The problem is that ENTSOG consists of companies whose business model is to own as many pipelines as possible. At the same time they advise which pipelines to build. It appears that there is a clear conflict of interest.*"[62] This conflict of interest is leading us towards a massive gas lock-in and dependency, led by gas operators and their fossil clients, while our policy-makers are appointing them as the solution-makers to the global energy crisis that they co-created.

Embracing a US fossil future

For all the activities mentioned in this section, see our interactive map 2

While REPowerEU was attempting to secure Europe away from Russia (Europe imported 40% of its gas from Russia in 2021, see our chapter "US LNG flooding Europe"),[63] it also created new alliances and sought new suppliers. In this geopolitical shift, the US became a major player. As we can see in this excerpt from a paper by the European Commission from late February 2022, right after the beginning of the war in Ukraine, both regions had compatible interests:[64]

While attending an EU summit in Brussels in March 2022,[65] US President Joe Biden announced that 15 billion cubic metres (bcm) of LNG would be immediately redirected and delivered to the EU to help replace Russian gas.[66] Starting in 2023, the goal was to scale this up to an additional 50 bcm of US LNG annually by 2030 (by the end of 2022, an additional 32.6 bcm had already been delivered to the EU).[67] Biden called on the EU and its member states to expand their LNG infrastructure.

Table 1: Comparison of US and EU gas markets

US	EU
• Biggest gas producer in the world	• 2nd biggest gas consumer after the US
• Growing gas production	• Rapidly declining domestic gas production
• Increasing gas exports	• Increasing gas imports (today 90% of demand); need to diversify imports to improve security of supply
• US is significantly increasing its LNG export infrastructure	• EU has strongly developed LNG import infrastructure with available capacity (utilisation rate was 74% in January 2022)
	• Additional LNG terminals in development, some with EU support. Since January 2021 the Krk LNG terminal is operational in Croatia

Source: ec.europa: EU-US LNG TRADE US liquefied natural gas (LNG) has the potential to help match EU gas needs, European Commission, February 2022[68]

The same day, the European Commission and the US also made a joint statement on European Energy Security.[69] "*Through the Joint European action for more affordable, secure and sustainable energy (REPowerEU), the EU confirmed its objective to reach independence from Russian fossil fuels well before the end of the decade, replacing them with stable, affordable, reliable, and* ***clean energy**** *supplies for EU citizens and businesses.*" While declaring that "*The United States and the EU are committed to meeting the goals of the Paris Agreement, achieving the objective of net zero emissions by 2050, and keeping a 1.5 degrees Celsius limit on temperature rise within reach,*" both allies assert that "*natural gas remains an important part of the EU energy system in the* ***green transition.****" They announce they will immediately start a joint "Task Force on Energy Security."

The plan is for the "*European Commission (to) work with the governments of EU Member States to* ***accelerate their regulatory procedures**** *to review and determine approvals for* ***LNG import infrastructure****, to include onshore facilities and related pipelines to support imports using floating storage regasification unit vessels, and fixed LNG import terminals.*" Additionally, the European Commission will "*support* ***long-term contracting**** *mechanisms and partner with the US to encourage relevant contracting* ***to support final investment decisions on both LNG export and import infrastructure.****" It will also "*work with EU Member States toward ensuring stable demand for additional US LNG until at least 2030 of approximately 50 bcm/annum.*"

This clinched the deal on the massive LNG boom coming from the US to Europe, which risks worsening human and environmental misery along its way and locking us into a fossil fuel future. This lock-in would lead to a world where a select few make record profits, while many others see their lands, waters and communities destroyed, face serious health issues and struggle to make ends meet. But how did we get here?

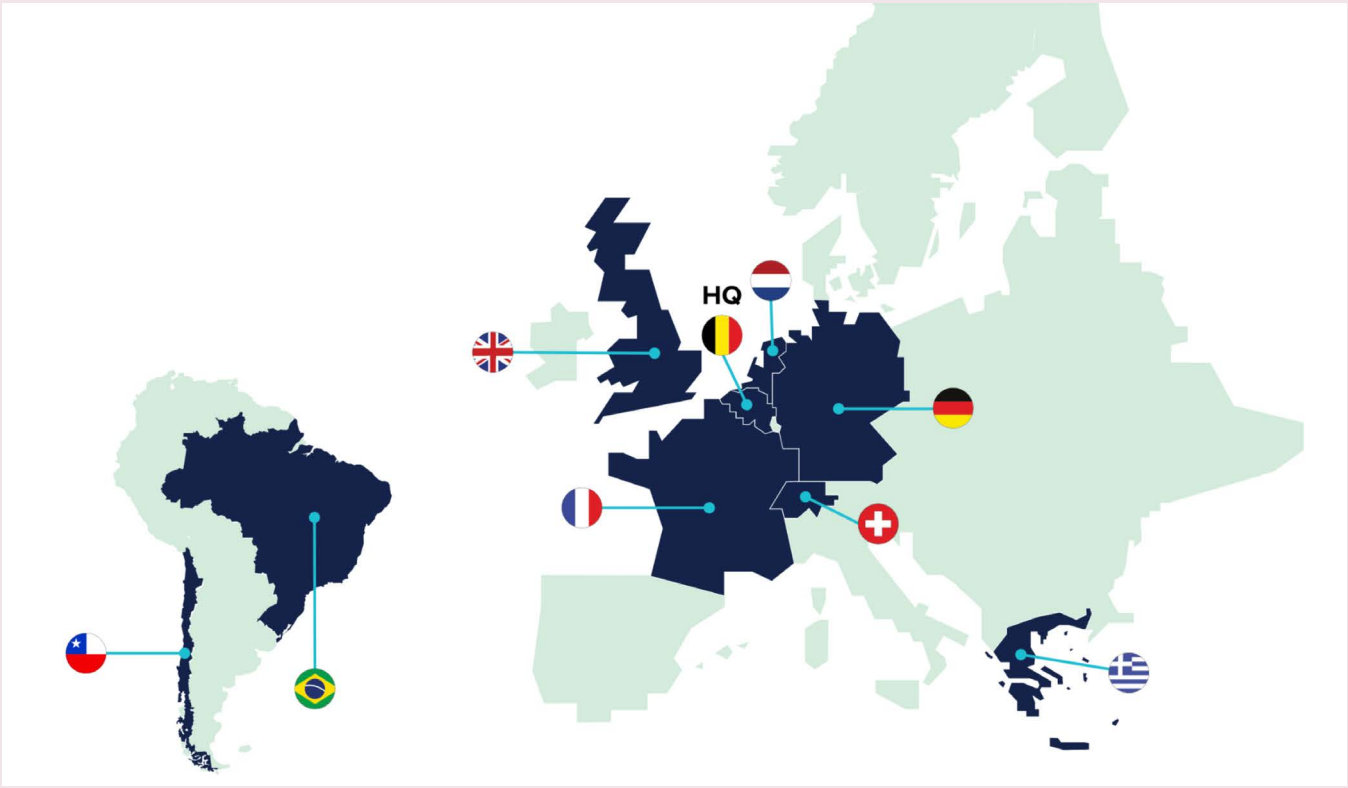
* emphasis added

The Fluxys tentacles that lock us into LNG

Related to this box, see our interactive maps 2 and 3

One of the key protagonists in the gas lock-in is Fluxys, a gas operator which is owned at 77.4% by Belgian municipalities and another 2.13% by the national investment vehicle FPIM[70]. It operates 12,000 km of pipelines across Europe and Brazil,[71] and in early 2023 took over a 24.1% stake in the 12,000 km pipeline network of Open Grid Europe, the biggest gas operator in Germany.[72] Fluxys operates the LNG import terminal in Zeebrugge, Belgium, which is the prime re-exporting platform for Russian LNG,[73] and according to IEEFA accounting for 72% of these re-exports within the EU in 2022, of which 93% went to non-EU (mostly Asian) markets.[74] Fluxys also operates the second-largest LNG terminal in continental Europe in Dunkirk, France.[75] Dunkirk is also the largest single entry-point for LNG from the US into Europe (according to our research done using MarineTraffic). Its other activities in Europe include pipelines, the Revithoussa LNG terminal and the Alexandroupolis Floating Storage and Regasification Unit (FSRU) terminal in Greece,[76] as well as a key stake in the Trans Adriatic Pipeline (TAP)[77]. In 2021 it acquired a 29.12% stake in the Gasbol pipeline connecting Bolivia and Brazil,[78] and in 2022 acquired 80% of the shares in the biggest LNG terminal of Chile, Quintero.[79]

Figure 5: Global activities of the Fluxys Group



Source: Fluxys

Through its CEO, Pascal De Buck, and Chief Commercial officer, Arno Büx, Fluxys has a seat on the boards of both ENTSOG and GIE, respectively.[80]

Fluxys has multiple stakes in the shift of the fossil fuel industry. The energy crisis represents a unique opportunity to expand, preferably with public money. A key example is the development of the Southern gas corridor, presented as an alternative Russian gas for Southeast Europe[81], with the TAP being a major expansion opportunity for Fluxys. As a key shareholder since the very beginning in 2013,[82] Fluxys reportedly already put the massive pipeline on the PCI list and secured European money for it twice.[83] While the project was contested in courts in different places across Europe[84] and is still under trial now in Italy,[85] the expansion of the TAP was one of the early projects identified by REPowerEU as necessary and eligible for accelerated European fundings.[86] On 18th July 2022, European Commission President Ursula von der Leyen and Energy Commissioner Kadri Simson travelled to Baku in Azerbaijan, where they closed a deal to double Azerbaijan's gas exports to Europe through the TAP.[87] Three months later, the construction of submarine parts of the pipeline started.[88] In January 2023, Fluxys announced an increase of its share in the TAP,[89] just days before the first phase of the expansion was officially launched.[90]

Fluxys is also keen to work on the diversification of Greek gas imports, as Greece was historically very reliant on Russian gas (covering up to 40% of its annual energy needs).[91] Co-owning Greece's only onshore LNG terminal, Revithoussa[92], Fluxys has the infrastructure ready to make the shift towards LNG and other suppliers. In the first three months of 2022, the Revithoussa terminal was covering 43% of Greece's total fossil gas imports.[93] In April 2022, DESFA (co-owned by Fluxys through the Senfluga consortium[94]) announced[95] it was going to expand the Revithoussa terminal[96] with a floating storage unit (FSU), despite the terminal historically operating far under its capacity, according to GEM.[97] The argument to push for an extension was that Greece had to be able to absorb the LNG needed to phase out Russian gas.[98] The new supplier was mainly the US, considered by the European Commission as key to securing South-Eastern Europe and which increased its exports to Greece.[99]

This came as an addition to another floating terminal in Greece, the Alexandroupolis FSRU terminal, which is also co-owned by Fluxys and was pushed by the US to supplant Gazprom's influence in the Balkans with its own.[100] This terminal was funded as a PCI and received European public money.[101] It will be connected to the TAP.[102]

Charles Michel, the president of the European Council and former Belgian Prime Minister, inaugurated the Alexandroupolis terminal in May 2022, framing it clearly into the war context and the need to secure Europe:

"Russia's war in Ukraine is a moment of urgency – a moment of truth– for the European Union. We must build our European sovereignty. We must be more strategic. And we must forge our new energy independence. And now it's clear for all to see. That's exactly what you are doing and exactly what we are doing together. I firmly believe we are seeing a new dawn for European energy independence. This project clearly contributes to the EU's security of energy supply and also to our long-term climate change goals. (…) It is a geopolitical investment and this is a geopolitical moment. (…) This project that we inaugurate today sends a clear signal: we are taking our destiny into our own hands."[103]

This European future in Greece will lead to a highway for US LNG. But the biggest stake for Fluxys plays out in Northern Europe. The company is expecting the delivery of an FSRU by the end of 2023[104] and awaiting a Final Investment Decision (FID) on a new onshore LNG terminal in Germany (the Stade LNG terminal[105]) which was reportedly conceived to get gas from the US to Germany.[106] In March 2022, in the face of the war, the consortium of which Fluxys is part[107] - the Hanseatic Energy Hub - reportedly got an "early municipal approval."[108] While waiting for this FID, Fluxys is betting on Dunkirk, in France, where it holds the second-largest LNG terminal of continental Europe and offers the biggest entry-point to US gas on the continent.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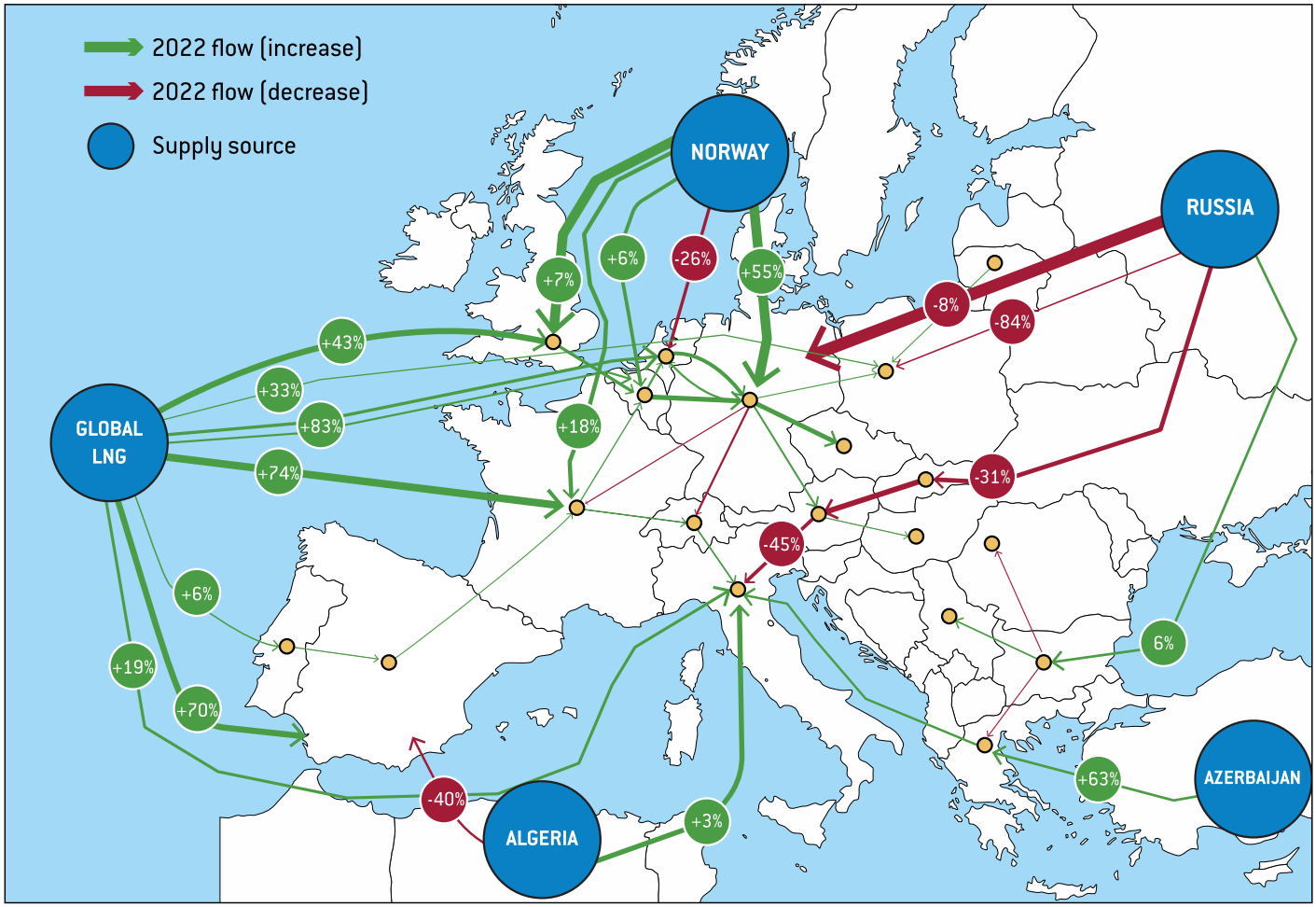
US LNG flooding Europe

Figure 6: Natural gas flows in the European market, first half 2022 vs first half 2021



Source: Bruegel[109]

It is not surprising gas imports into Europe changed dramatically in 2022. According to data from ENTSOG, Europe imported 20 bcm less gas in 2022 compared to 2021.[110] In 2021, Russian fossil gas accounted for 153 bcm, representing 41% of the EU's total gas imports of 373 bcm. This influx dropped drastically from the end of February, when Russia invaded Ukraine. Russia decreased its imports into the EU by 56% to 67 bcm, and only accounted for 19% of total gas imports in 2022, becoming the third most important source of gas. With 133 bcm, 'Global LNG' accounted for 37% of all EU gas imports in 2022, as opposed to only 20% in 2021.[111] Ironically, LNG importing countries have increased their Russian LNG imports too, which increased by 27% to 16.6 bcm.[112]

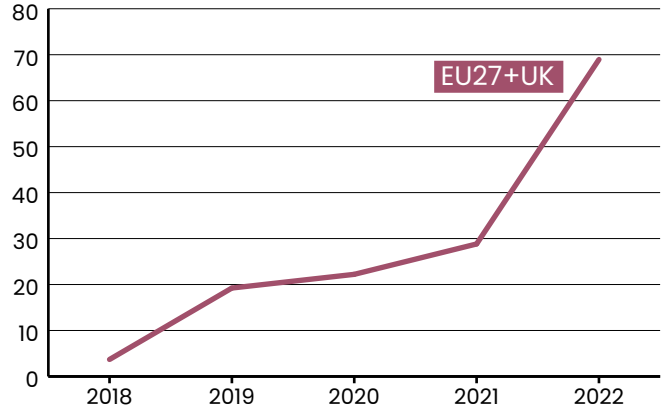
The total volume of LNG imports to the EU is possibly even higher, since the significant increase of gas imports from the UK is in large part thanks to their increase of US LNG imports, which are then regasified and in part pipelined to Zeebrugge in Belgium, and Balgzand in the Netherlands,[113] and from those places sent to the rest of the continent. In 2022, the UK tripled its gas exports to the EU, compared to 2021.[114] And while LNG has become more important in the European gas market in recent years, 2022 was the year it really boomed, becoming the single most important source of gas for Europe, and making the EU the largest global LNG importer, overtaking China and Japan.[115]

According to data from GIE[116], LNG imports have increased substantially across Europe. In total, the amount regasified in LNG terminals and sent out to the European gas grid, increased from 76.7 bcm in 2021 to 132.7 bcm in 2022. This is an increase of 73% in just one year. The largest percent rise in the EU can be attributed to Belgium and France, with increases of 175% and 103% respectively. These LNG hubs have become, in tandem with the Netherlands and the UK, the supplier for gas-starved Germany, which relied heavily on Russian pipeline imports until 2022.[117]

Europe becoming the first customer for US LNG

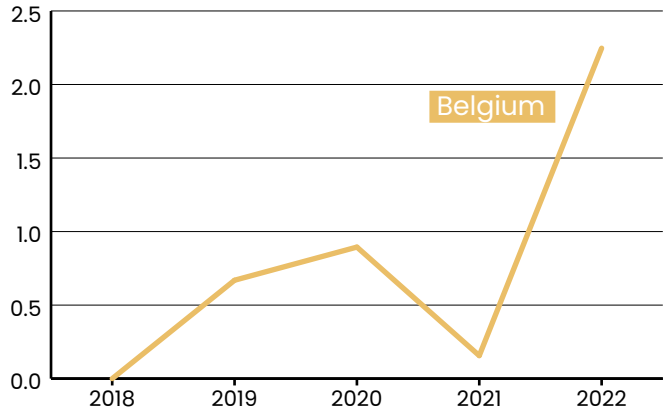
For the flows of US LNG in 2022, see our interactive map 1

Figure 7: US imports of LNG into the EU 27 + UK 2018 - 2022



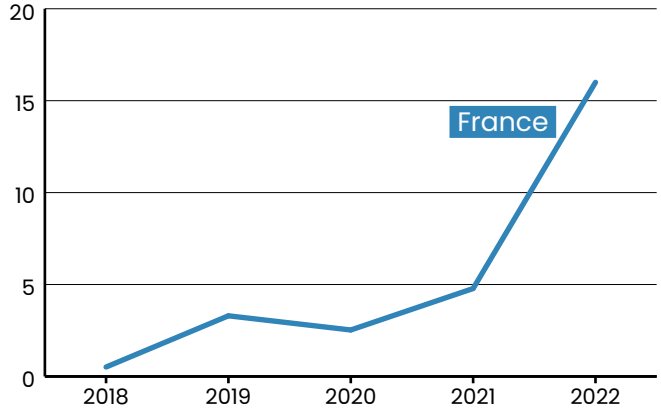
Source: Greenpeace International from EIA data, converted to bcm

Figure 8: US imports of LNG into the Belgium 2018 - 2022



Source: Greenpeace International from EIA data, converted to bcm

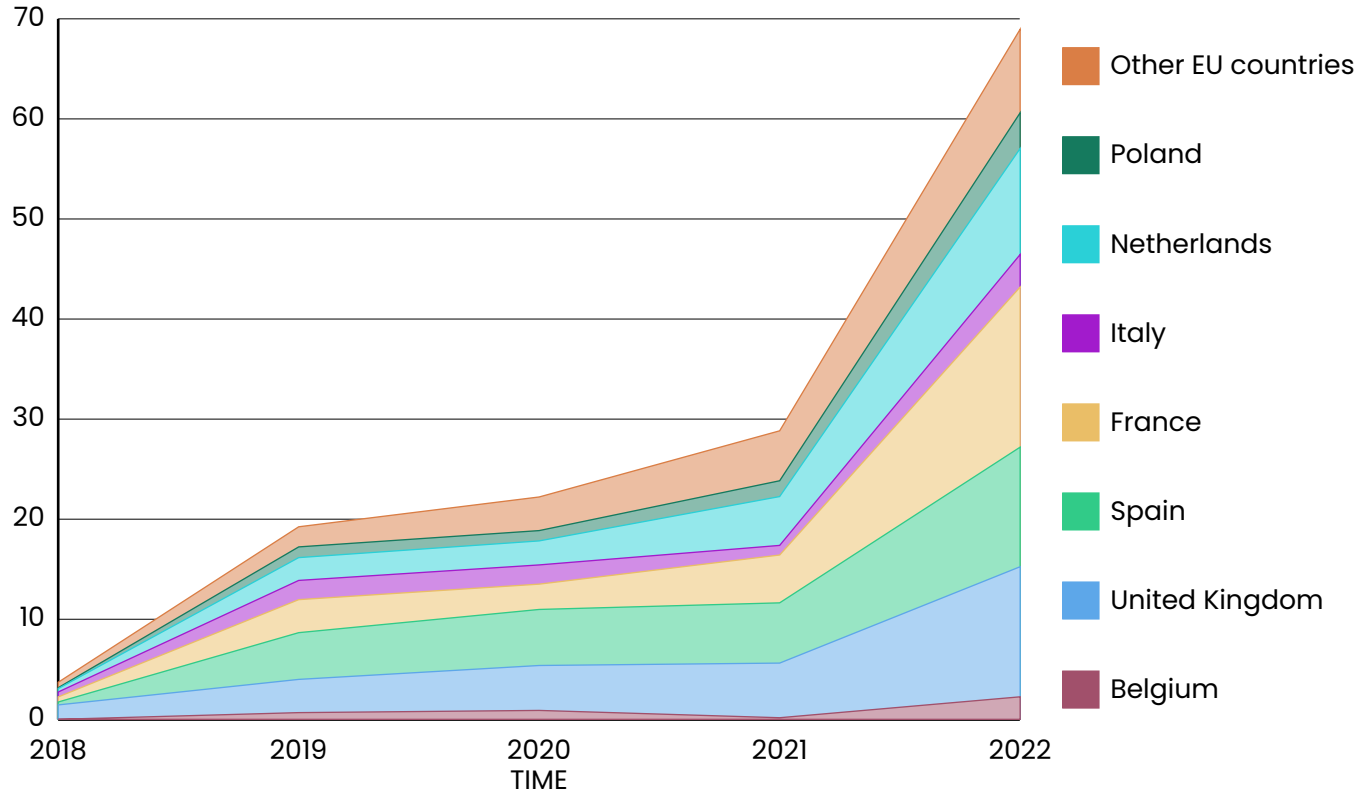
Figure 9: US imports of LNG into the France 2018 - 2022



Source: Greenpeace International from EIA data, converted to bcm

Today, no country supplies more LNG to Europe than the United States of America.[118] The import of so-called "Freedom gas"[119] surged in 2022, although it is the culmination of a trend which started in 2016.[120] US LNG exports began during the Obama era, and really took off under the Trump administration.[121] Emblematic for this increase was the eighth Energy Council between the United States and the EU Commission in 2018[122] where EU President Juncker and President Trump agreed to enhance strategic cooperation between the European Union and the United States in the field of energy. As part of this effort, the EU would increase its imports of LNG from the US to improve the diversification and security of its energy supply. To achieve this goal, both parties would collaborate to simplify the trade of LNG.[123] Over the next four years, US LNG exports into Europe and the UK increased by 1767%.[124]

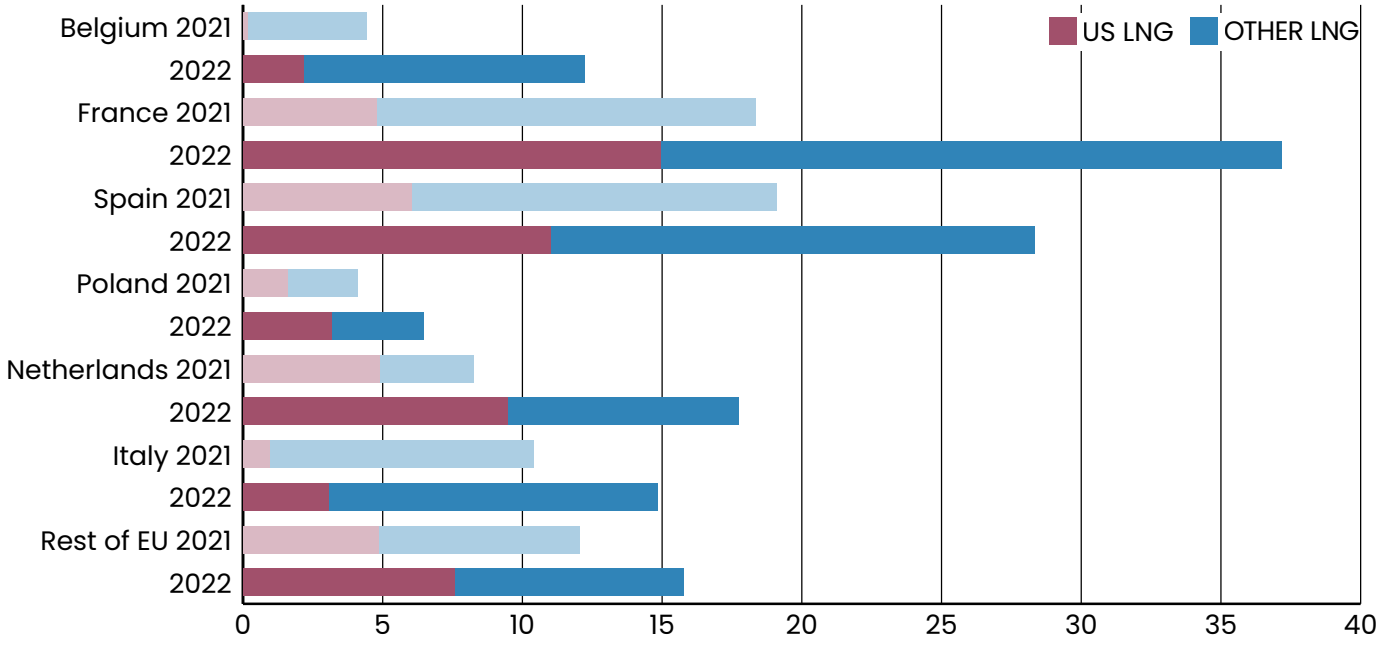
Figure 10: US LNG import into the EU27+UK 2018 - 2022



Source: Greenpeace International from EIA data, converted to bcm

The above graph shows the increase in US LNG imports from 3.69 bcm in 2018, to 68.96 bcm in 2022.[125] Over the past four years, the US has grown from a marginal gas exporter to Europe and the UK, to one of the most important. On average, these imports have grown by 470% annually since 2018.

Figure 11: LNG import into the EU27 2021-2022

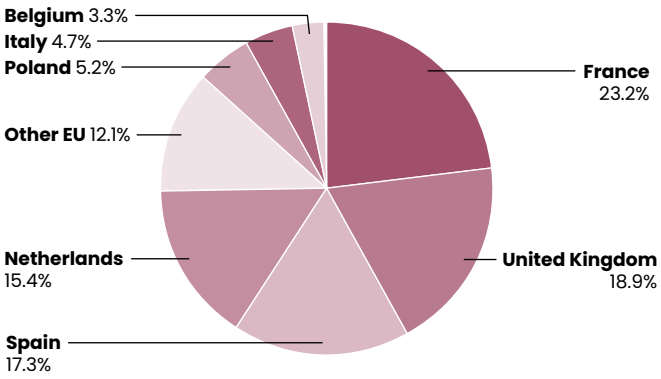


Source: Greenpeace International, based on data from the EIA and GIE, converted to bcm

The graph above shows the astronomical growth of US LNG imports into Europe after the start of the war in Ukraine compared to the year before. Of this 2022 US LNG boom, no country imported more than France: 16 bcm in 2022, of which 13.4 bcm came in the period of March till December. The second largest importer in 2022 was the UK, with Spain and the Netherlands following closely. The biggest percentage increase was in Belgium, which noted a nearly 1337% increase in US LNG imports in 2022 compared to 2021. The EU and UK grew their US LNG imports by 140% in 2022 compared to 2021. In total, the EU and UK have imported 57.8 bcm of US LNG since the start of the war, which was 35.85 bcm more than the same period in the previous year. In total, the EU increased its US LNG imports by 32.6 bcm, doubling the 15 bcm target set out by the Biden administration.[126] In the case of the Netherlands, Belgium, the UK and France, a significant share of their increased gas imports were related to the acute supply crunch in Germany, with a lot of the imports leaving the importing country eastwards.

In 2022, France accounted for nearly a quarter of all US LNG imports, with the UK and Spain importing 19% and 17% respectively. And while Belgium only accounted for a small portion of the direct US LNG imports, a large chunk of US gas still ended up in the Belgian pipelines thanks to the French Dunkirk LNG terminal, and the UK LNG terminals which then transport it through pipelines[127] (both the Dunkirk LNG terminal and UK-Belgium pipeline are owned by Fluxys, see our box "The Fluxys tentacles that lock us into LNG"). See our website for an interactive map with shares of US LNG versus total LNG imports per European country (map 1).

Figure 12: US LNG exports to Europe in 2022



Source: Greenpeace International from from EIA data

Dunkirk terminal: The entry point for US gas into Europe

Dunkirk LNG was founded on the initiative of Électricité de France (EDF) (which is owned at 96% by the French State),[128] TotalEnergies and Fluxys after a final investment decision in 2011[129]. It started operations in 2017.[130] In October 2018,[131] EDF and TotalEnergies sold their shares to Fluxys, which already held 25% of shares[132] of Dunkirk LNG. Since then, the Belgian company is the main owner (30.39%), through its majority share in the FluxDune consortium which owns 60.76% of the terminal.[133] It is operated by Gaz-Opale, another company of the Fluxys family, co-owned by Dunkirk LNG (51%) and Fluxys (49%).[134]

Dunkirk benefits from a strategic location thanks to the 74 km pipeline Fluxys built in May 2016,[135] connecting it to the Fluxys Zeebrugge LNG terminal and providing it with a 8 bcm/y access to Belgium, Germany, the Netherlands and the UK.[136]

The French terminal began importing US gas as soon as it started operating.[137] These imports are primarily owned by EDF, which holds a 8 bcm/y regasification contract with Dunkirk LNG until 2036 (representing 61.5% of the current 13 bcm/y regasification capacity of the terminal).[138] EDF was the first French company to sign a contract with a US LNG company, Cheniere Energy, back in July 2014.[139] This 20-year contract came with an option to extend for another 10 years. One year later,

EDF signed another contract with Cheniere for deliveries to Dunkirk.[140] It became the largest LNG terminal for US gas entering France.

Using MarineTraffic, we tracked all ships leaving the US to France between February and December 2022. Out of a total of 140 tankers, 80 went to Dunkirk, representing 57% of US tankers going to France.

LNG terminals spreading over Europe

The US LNG boom to Europe came with a rush of plans to build new import terminals. According to the Global Energy Monitor (GEM), European states have announced plans for an additional LNG capacity of 227 bcm per year to come online in the coming years. In total 8 projects are under construction, and 38 more development and expansion projects have been announced.[141] See our interactive map 3.

Of these projects, seven consist of floating storage and regasification units (FSRU) coming online by the end of 2023 in Germany, the Netherlands, Estonia, and Finland, and 38 more LNG terminals (onshore and floating) are proposed for the coming years.[144] Germany outpaced other countries in the 2022 LNG frenzy, with an announced increase of 94.3 bcm/y[145]. Having no LNG terminals of its own, the country feared gas shortages in the aftermath of the closure of the Russian pipelines. In 2021, Russia accounted for 55% of German gas imports.[146] Experts have pointed out that due to decades of cheap Russian gas imports Germany could produce cheap exports and remain the heart of European industry.[147] This dependence would come crashing down in 2022, notably with the closure of the Nord Stream pipeline.[148]

Figure 13: Operational, and planned LNG terminals in Europe[142]
Coloured by year of operation[143]

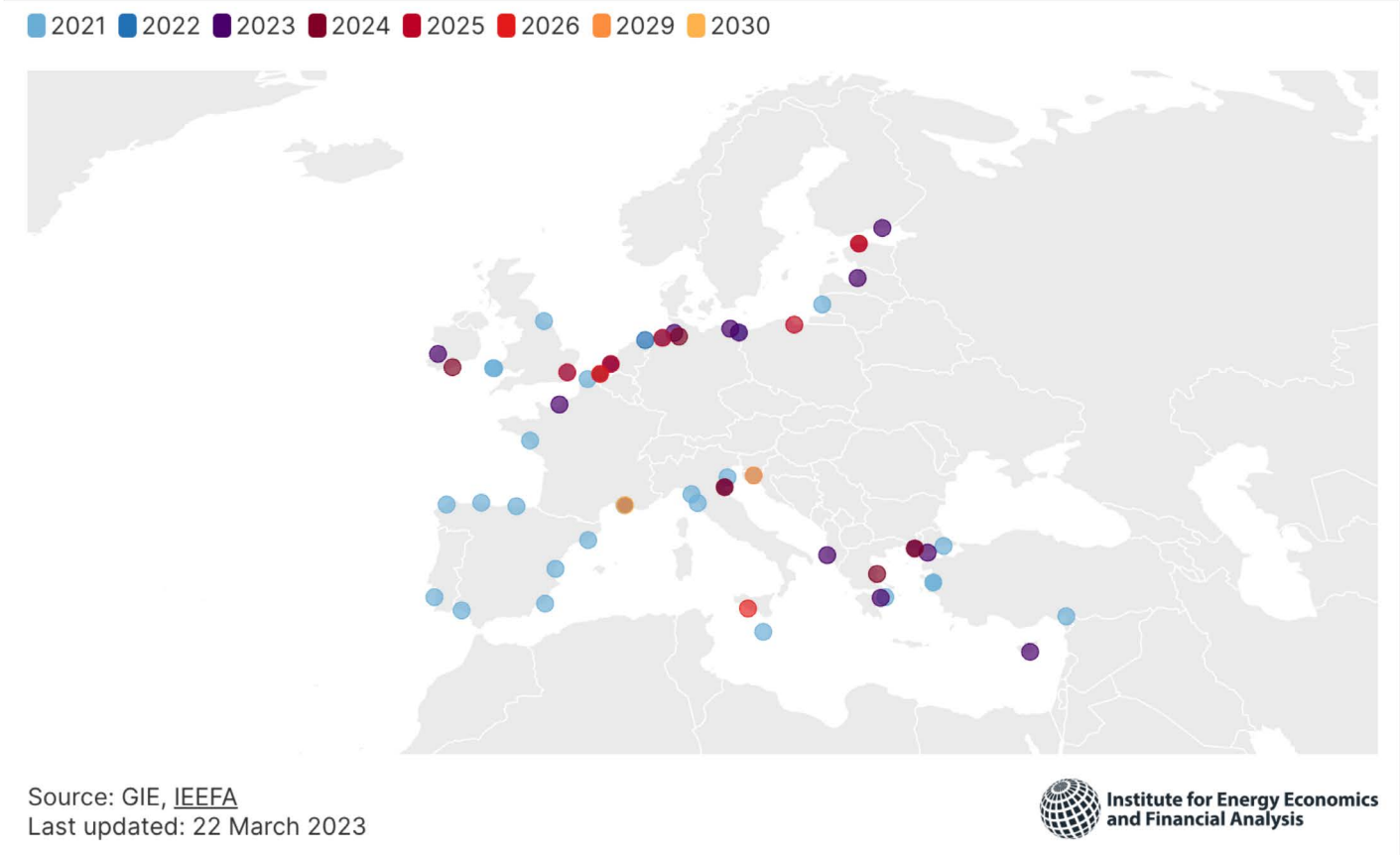
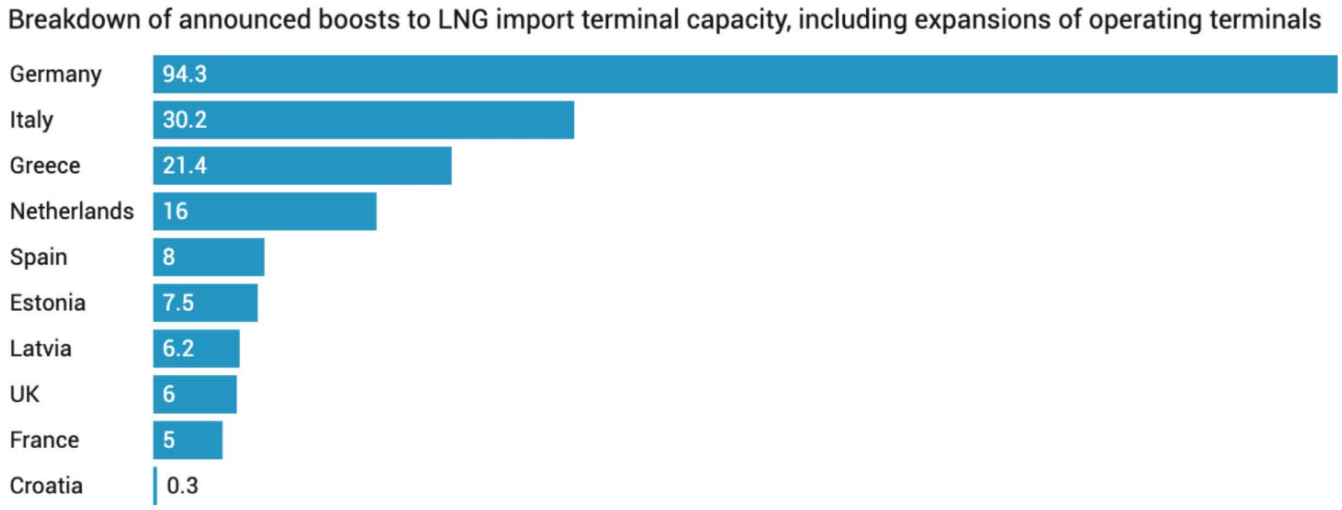


Figure 14: Europe's LNG rush in 2022

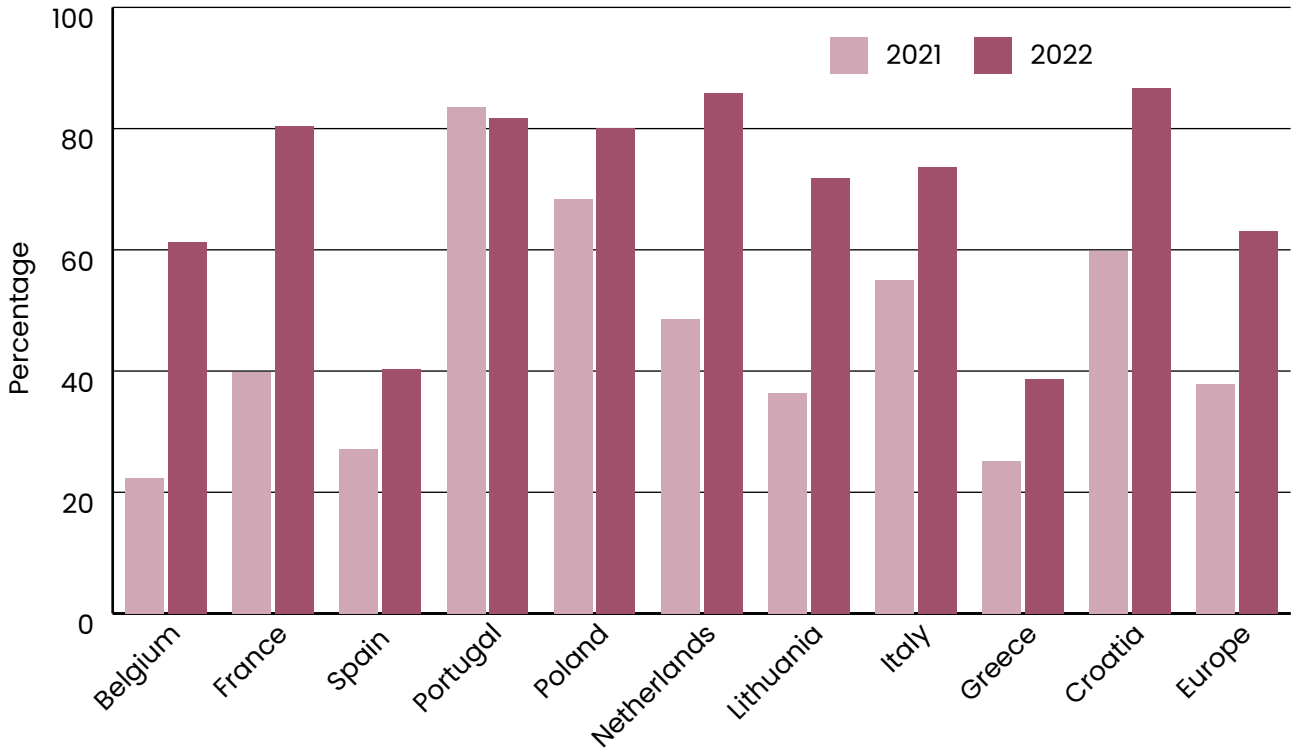


Source: Data from GEM[149]

UNNEEDED LOCK-IN

This infrastructure buildout is irrational. European decision-makers, blinded by the panic created by the Russian invasion of Ukraine and fear for Europe's security of supply, outsourced the analysis of energy market forecasts to the gas operators who prescribed to build more terminals, in fast-tracking mode. Reports stating European LNG terminals were running at full speed in 2022 are overstating the actual utilisation rate of these terminals. The graph below shows how European LNG terminals have been underutilised throughout 2021 and 2022:

Figure 15: Regasification utilisation of EU27 LNG terminals in 2021 vs 2022



Source: Greenpeace International, based on data from GIE[150]

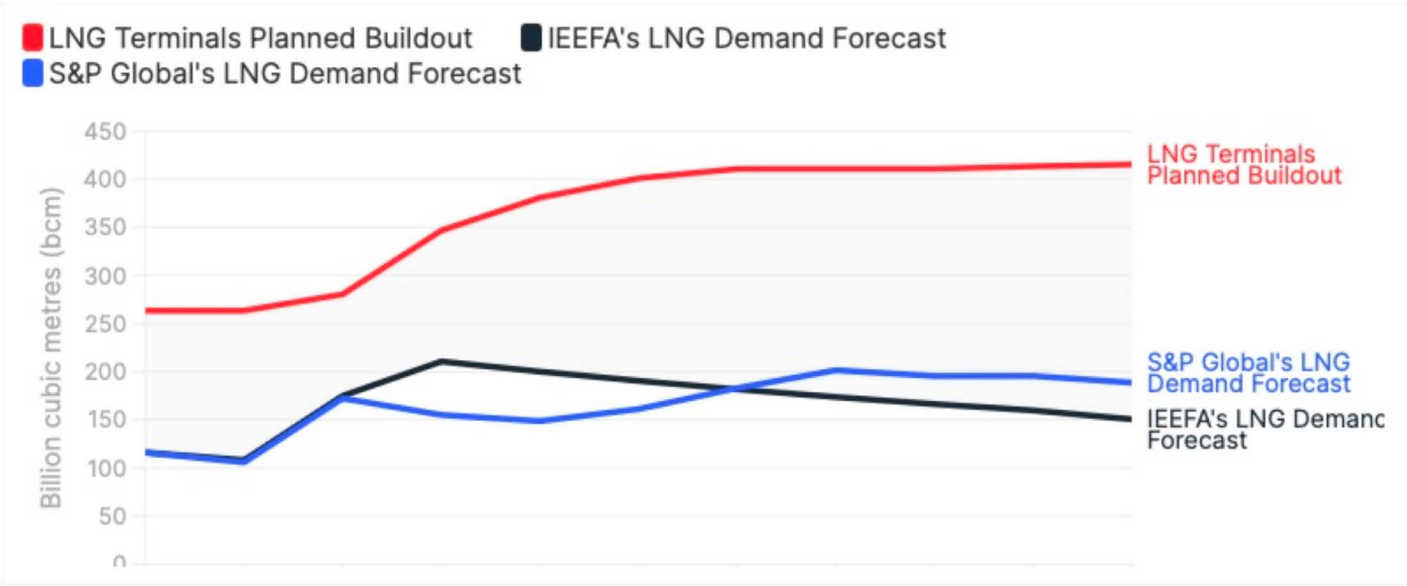
According to data compiled through the transparency database of GIE, in 2021, EU LNG terminals had a technical regasification utilisation rate of only 37.8%, meaning 62.2% of technical regasification capacity was unused that year. Countries like Belgium (22.31%), Greece (25%) and Spain (27%) were performing even lower, whereas Portugal was already nearing its limit with 83.5% utilisation in 2021.

Even in the 2022 surge of LNG to Europe, EU LNG regasification utilisation only rose to 63%. Meaning that in total, LNG terminals in the EU had a leftover capacity of 77 bcm in 2022, or about half of the 153 bcm imports of Russian gas in 2021. While big LNG importers such as France and the Netherlands were nearing full technical capacity with utilisation rates of 80% and 86% respectively, many LNG importers had plenty of unused regasification capacity in 2022. Notably Spain, which has a well known historical overcapacity issue, had a leftover capacity of 60%. Over the last 20 years, the annual utilisation rate of Spanish terminals has never reached 50%, and the average utilisation rate of all Spanish import capacity (LNG and pipelines) has been 34%, according to research done by IEEFA.[151] In absolute numbers, Spain had a regasification surplus of nearly 42 bcm in 2022. But also France and Belgium had notable leftover technical regasification capacity. The Belgian Zeebrugge LNG terminal had a 22% technical regasification utilisation rate in 2021, and 61% in 2022. Whereas the French terminals had a utilisation rate of 40% in 2021, and 80% in 2022.[152] In 2021 the Dunkirk LNG terminal only had a regasification utilisation of 27%, which spiked to 75% in 2022.[153] However, this still left a quarter of technical regasification capacity unused in what was probably the most historic LNG year to date. Fluxys is still adding regasification capacity in Zeebrugge, where expansion plans will raise nameplate capacity by 8.16 bcm/y capacity (6 mtpa LNG) by 2026.[154]

This low utilisation rate, indicates that massive buildout of new LNG terminals, to more than double capacity[155], to replace the Russian pipelines is not needed. Big LNG import terminals like the ones proposed normally take around five years to build and put online.[156] The pipelines needed to connect these terminals to the gas grid also take several years to build. This is far too late for the short-term need to reduce Russian gas imports by two-thirds by the end of 2022.[157] FSRUs are ready to supply the European gas grid faster than traditional onshore LNG terminals, and some have indeed entered service at the end of 2022 and in 2023, but it will still take years for the majority of them to come online according to current projections.[158] In the case of Germany, the proposed floating terminals alone would equate to the total gas imported from Russia, and the onshore terminals coming online later in 2026 would add another 50 bcm/y, according to journalists who were able to access a leaked document from the German government.[159]

These new projects, with a combined annual capacity of 227 bcm, are expected to more than double existing LNG capacity (157 bcm/y).[160] In total, existing and proposed capacity would account for about 98% of the 392 bcm annual European gas demand. To put this in perspective: the EU imported 153 bcm of gas in 2021 from Russia.[161] Added to these LNG imports and terminal expansions, new pipelines have been built and expanded, maximising the Norwegian[162] and UK export[163] capacity. In short, in a Green Deal future where EU gas demand will need to decrease, EU member states are increasing their gas infrastructure on a substantial scale, locking us into new, expensive and unneeded infrastructure. IEEFA concludes that "*Assuming the REPowerEU targets are achieved and that gas consumption in Turkey does not fall, then total European demand for LNG would only be approximately 150 bcm in 2030, down from roughly 175 bcm in 2022— implying that the utilisation rate of Europe's LNG terminals would fall below 40%.*"[164]

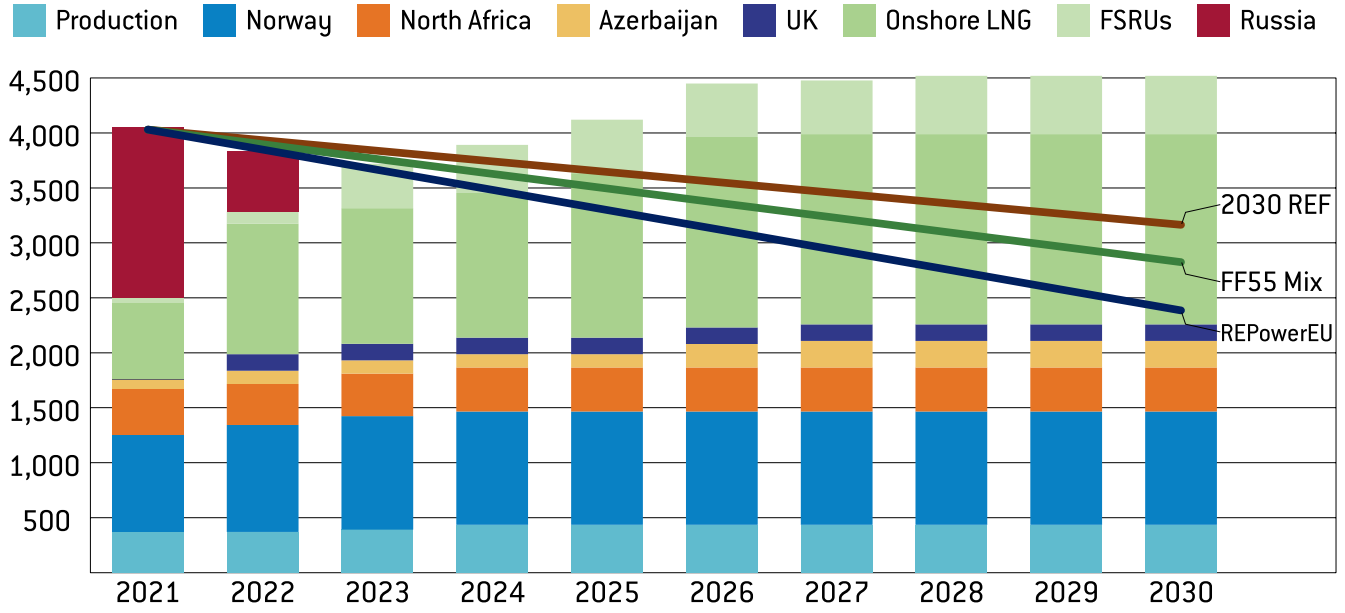
Figure 16: Europe's LNG outlook: planned terminals buildout and LNG demand forecast



Source: IEEFA[165]

Even in a business as usual scenario where EU gas demand remains the same as in 2022, these announced LNG projects will add more capacity than Europe needs. As a result, these proposed LNG expansion projects could end up exceeding future demand and result in costly, underutilised terminals. IEEFA projected that over half of Europe's LNG infrastructure assets could be left unused by 2030.[166] This analysis is being shared by politicians signing off on these plans. As revealed by a leaked document[167] from the German Federal Ministry for Economic Affairs and Climate Action, the Ministry also assumes a sizable overcapacity in the planned LNG terminals in Germany. This occurs while the Ministry assumes consumption in Germany will have to fall from the previous high of 96 bcm in 2021 to around 70 bcm in 2030 and 20 bcm in 2040, in order to meet climate targets. But due to long-term contracts made, the onshore terminals would operate in addition to the floating terminals and not instead of them.

Figure 17: EU gas demand and supply 2021-2030 in TWh



Source: Bruegel[168]

Bruegel, a European economic think tank, predicts that by 2030, the decline in European gas demand could be so drastic that most of the continent's LNG import infrastructure will become unnecessary because enough gas would be available through pipelines, which is far cheaper and less CO2-intensive than LNG.[169] This would leave the countries that are hastily building new LNG terminals with very costly stranded assets.

This intended LNG infrastructure boom has been announced while a series of studies proposed scenarios for the EU energy future that would exclude the need for new fossil infrastructure. A March 2022 study by the think tanks Ember, E3G, and Bellona[170] found the EU could end Russian gas imports not with an LNG rush, but simply through implementing the EU 'Fit for 55'[171] climate and energy package. Meaning that by the time these new LNG terminals and pipelines could go into service, they will not be necessary if these 'Fit for 55' initiatives are completely implemented.

Locking us in using trojan horses

Given that costly fossil fuel projects would be difficult to justify in a future EU Green Deal which aims to reduce reliance on fossil fuels,[172] proposals for new LNG terminals are often justified by the possibility of eventually retrofitting them to import liquefied "green" hydrogen instead of fossil gas. However, green hydrogen (meaning produced through electrolysis using renewable electricity) is far from a reality at the moment. According to the IEA Global Hydrogen Outlook, hydrogen production using electricity accounted for just 0.04% of the global hydrogen production mix in 2021. The largest share of hydrogen produced was still using fossil gas (62%), and coal (19%). Even in their 2030 forecast, the IEA counts on gas and coal to produce the vast majority of hydrogen, with only 14 Mt out of 115 Mt being renewable hydrogen.[173] This is the trojan horse aspect of the hydrogen-ready promises of the fossil fuel industry. It's a way for the gas industry to continue producing fossil gas in the future.

German Chancellor Olaf Scholz has been particularly vocal about his ambitions to position Germany as the leading importer of hydrogen in Europe,[174] reportedly investing billions of euros of taxpayer money towards this end. Belgian energy minister Tinne van der Straeten also hopes for Belgium to become the primary entry point for hydrogen in Europe.[175] And France is advocating for hydrogen produced using nuclear energy.[176]

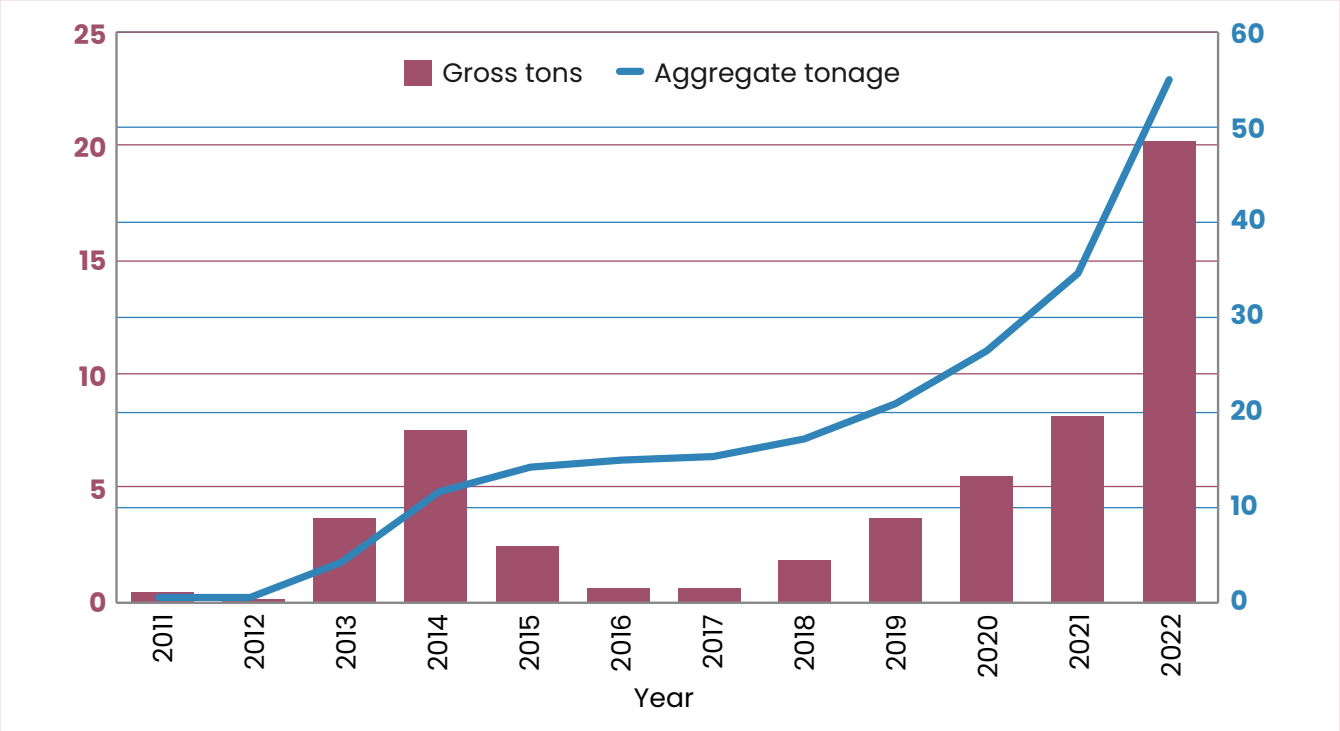
The narrative of "nearly-hydrogen-ready" LNG terminals implies that converting LNG terminals into hydrogen terminals is quick and simple. In reality the proposed transition from LNG terminals to liquefied hydrogen terminals is technically challenging and fraught with uncertainties. Retrofitting a liquefied hydrogen tank at an LNG terminal would require insulation with ten times higher thermal resistance than for LNG, according to the IEA,[177] posing a major challenge and likely making it more economical to build a new tank. Reusing components of LNG terminals for liquefied hydrogen is possible only if a concept for conversion has been considered during the terminal's construction phase, meaning that especially older LNG terminals won't have a future in a fossil-free EU. But even for new LNG terminals that are supposedly "hydrogen-ready," only about 50% of initial LNG investments could be reused, and any conversion of existing or planned LNG infrastructure is technically challenging and requires the replacement or drastic modification of most of the equipment.[178] The potential overlap in infrastructure between LNG and liquefied hydrogen infrastructure is far smaller than policy-makers and fossil fuel companies make it out to be.

Faced with the difficult chemical properties of liquefied hydrogen,[179] several proposed LNG terminals have shifted to a future where they will transport hydrogen through ammonia. This is inefficient due to energy losses throughout the process.[180] Additionally, ammonia is a very corrosive product, which means new infrastructure would be required for ammonia transport and storage.[181]

By betting on the widespread use of liquefied hydrogen, countries risk locking themselves into an expensive and energy inefficient future. These complaints have been reinforced by studies done by the International Renewable Energy Agency (IRENA)[182], Wood Mackenzie[183], and Bloomberg, which argue that liquefied hydrogen will only play a marginal role in the global hydrogen trade.[184]

Tankers lock-in

Figure 18: Global orders of new LNG tankers 2011-2022



Source: Greenpeace International from Refinitiv data

The 2022 LNG boom to Europe prompted proposals for new LNG terminals, but these also need specialised LNG tankers to transport the gas.[185] With LNG freight rates skyrocketing, this led to an increase in fleet values and a surge in new orders within the LNG industry. In 2022 alone, 213 new orders were placed, almost 2.5 times more than the 87 orders placed in 2021.[186] LNG carriers are one of the most expensive types of vessels, surpassing the cost of simpler tankers and container ships. Only cruise ships cost more. The average cost of a large LNG carrier has now reportedly increased to around €220 million,[187] which is twice the cost of a tanker or container ship.[188] At this price, the LNG tankers ordered in 2022 amount to a staggering bill of 47 billion euros. This steep price is attributable to the highly specialised needs for these ships, which require extremely low temperatures (-162°C) and high pressure to keep the gas liquefied.

In total, when the ordered vessels are ready, 56 million tonnes of LNG could then be transported across the world at the same time according to Refinitiv data. This is equal to 76.5 billion cubic metres of gas,[189] or about 7 days' worth of average global gas consumption (11 bcm/day).[190]

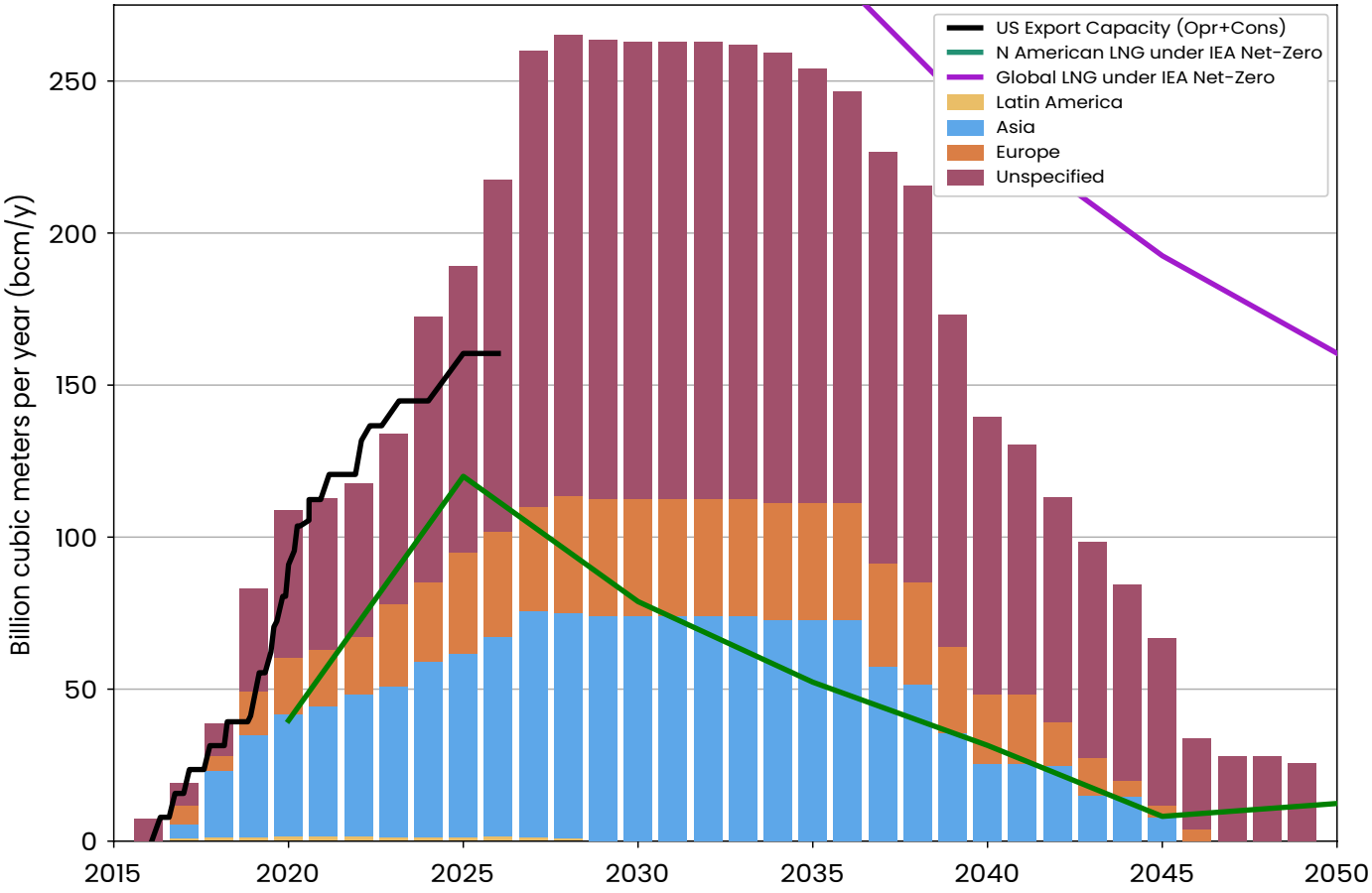
These highly specialised LNG tankers, however, are only able to transport LNG and it would take millions of dollars more to transform them to carry other products.[191] This means that the carbon lock-in effect that can be observed with the new LNG terminals would also be observed with the fleet of LNG vessels which will either transport fossil fuels across the oceans for decades to come, or will end up as stranded assets due to a decrease in gas demand. Either way it will be a costly affair for both the climate and the investors funding the shipping companies.

Contracted lock-in - tackling a short-term problem with long-term contracts

For the contracts mentioned in this section, see our interactive map 2.

The long-term contracts signed between European gas companies and US LNG terminals are another form of fossil lock-in that goes beyond the purely short-term needs in the frame of a shift away from Russian gas.

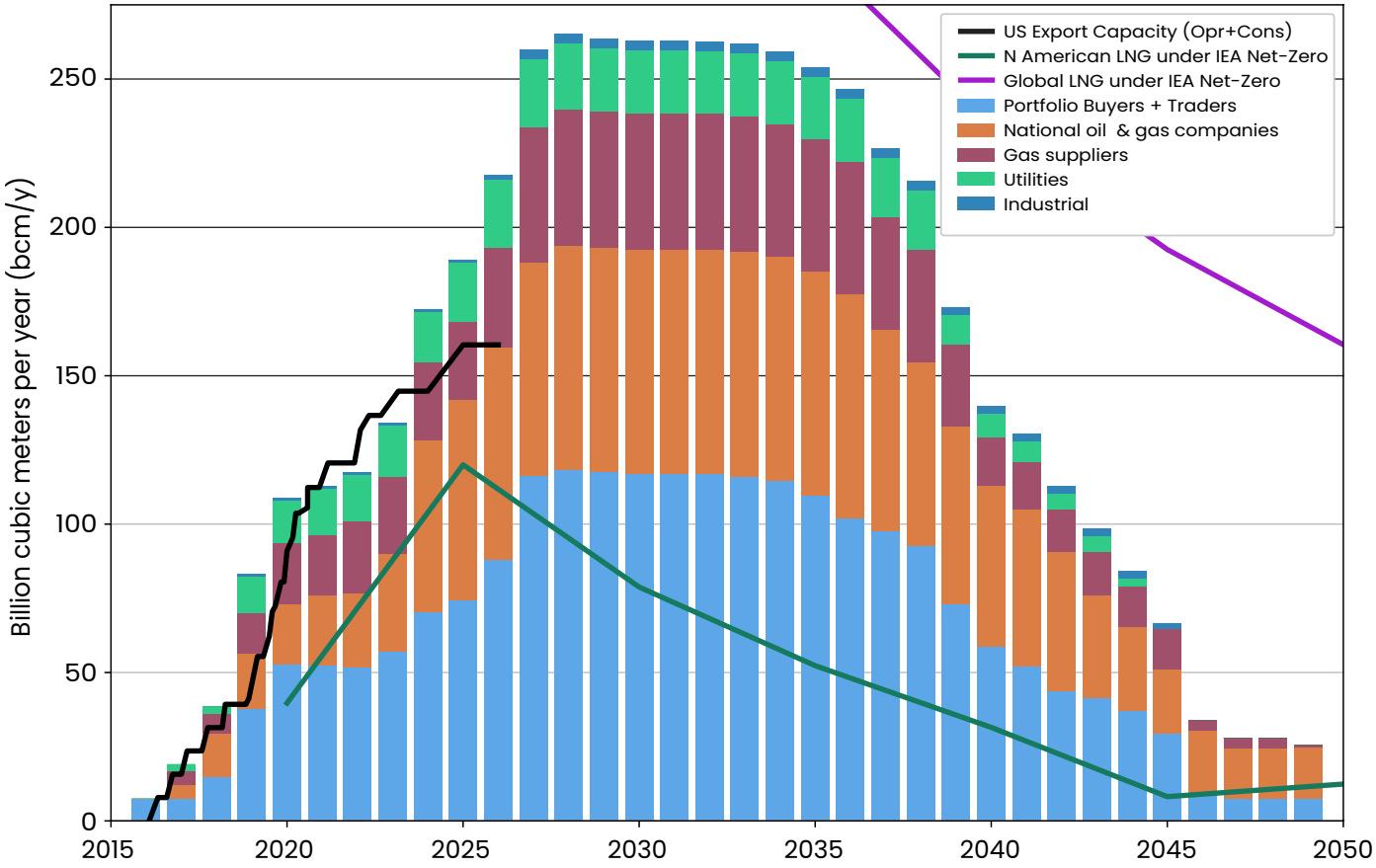
Figure 19: Contracted Volumes from US LNG Projects (BNEF)



Source: Greenpeace International, based on data from BloombergNEF[192]

When compiling the total contracted volume of US LNG since 2011,[193] the largest volume contracted is for unspecified markets. This means gas purchased by traders and portfolio buyers who then sell to the highest bidder. Asian markets have been the primary destination for US LNG producers due to their growing energy demand and willingness to pay a premium for LNG imports. However, the European energy crisis has caused EU countries to become the most important market for US LNG producers, mainly due to the fact that European gas companies are willing to pay the high prices portfolio traders have been asking. So while portfolio traders have signed the most contracts, they have been selling to European consumers the most since 2022. While the European shift to diversify away from Russian gas started with the 2014 Russian invasion of Crimea, it took on record speeds in 2022, and an array of new long-term contracts were signed with European gas companies.

Figure 20: Contracted Volumes from US LNG Projects (BNEF)



Source: Greenpeace International, based on data from BloombergNEF

UK companies such as Shell and BP have been involved in this trade since the beginning of US LNG exports.[194] These companies ship LNG to ports in the UK, the Netherlands, and Belgium, among other destinations.[195] French companies have taken the second place in contracted capacity, with TotalEnergies, Engie, and EDF leading the dance. In third place is Spain, with Naturgy and Endesa signing some of the first LNG export deals already back in 2011. A first boom in US LNG contracts with European companies can be observed in 2014, when UK, Spanish, and French companies made the first significant deals for US LNG, effectively kickstarting the US LNG growth spurt.

In 2018 there was another notable boom in contract agreements, when a range of new LNG projects on the US Gulf Coast received their FID, increasing export capacity in the following years.[196] The third, and most important surge in new US LNG contracts was in 2022, when a total of 17.65 million tonnes per annum (mtpa) of new LNG was agreed for sales to European gas companies.[197] This equals 24 billion cubic metres of gas, or as much as 65%[198] of the 2022 French gas consumption. It should be noted that this extra supply will be additional to already contracted supply of gas, and the uncontracted spot market supply.

Table 2: US LNG contracts signed in 2022

LNG Project Title	Purchaser	Purchaser Country	Agreement Term (Years)	Bcm/year Per Project	Agreement Date
Plaquemines LNG Phase I	Shell	UK	20	2.72	2/25/22
Lake Charles LNG	Gunvor Group	Switzerland	20	2.72	5/2/22
Rio Grande LNG	Engie	France	15	2.38	5/2/22
Port Arthur LNG	RWE	Germany	15	3.06	5/25/22
Corpus Christi LNG Stage I	Equinor	Norway	15	0.2448	6/8/22
Corpus Christi LNG Stage II	Equinor	Norway	15	0.1224	6/8/22
Corpus Christi LNG Stage III	Equinor	Norway	15	0.2448	6/8/22
Corpus Christi LNG Midscale 8-9	Equinor	Norway	15	1.1968	6/8/22
Sabine Pass LNG Phase I	Equinor	Norway	15	0.3944	6/8/22
Sabine Pass LNG Phase II	Equinor	Norway	15	0.204	6/8/22
CP2 LNG Phase I	EnBW	Germany	20	1.36	6/10/22
Plaquemines LNG Phase II	EnBW	Germany	20	1.36	6/10/22
Delfin LNG	Vitol	Switzerland	15	0.68	7/12/22
Lake Charles LNG	Shell	UK	20	2.856	8/23/22
Port Arthur LNG	INEOS	UK	20	1.904	12/1/22
Port Arthur LNG	Engie	France	15	1.1968	12/6/22
Rio Grande LNG	Galp	Portugal	20	1.36	12/20/22

Source: Greenpeace International based on data extracted from the Sierra Club LNG Tracker, converted to bcm/y

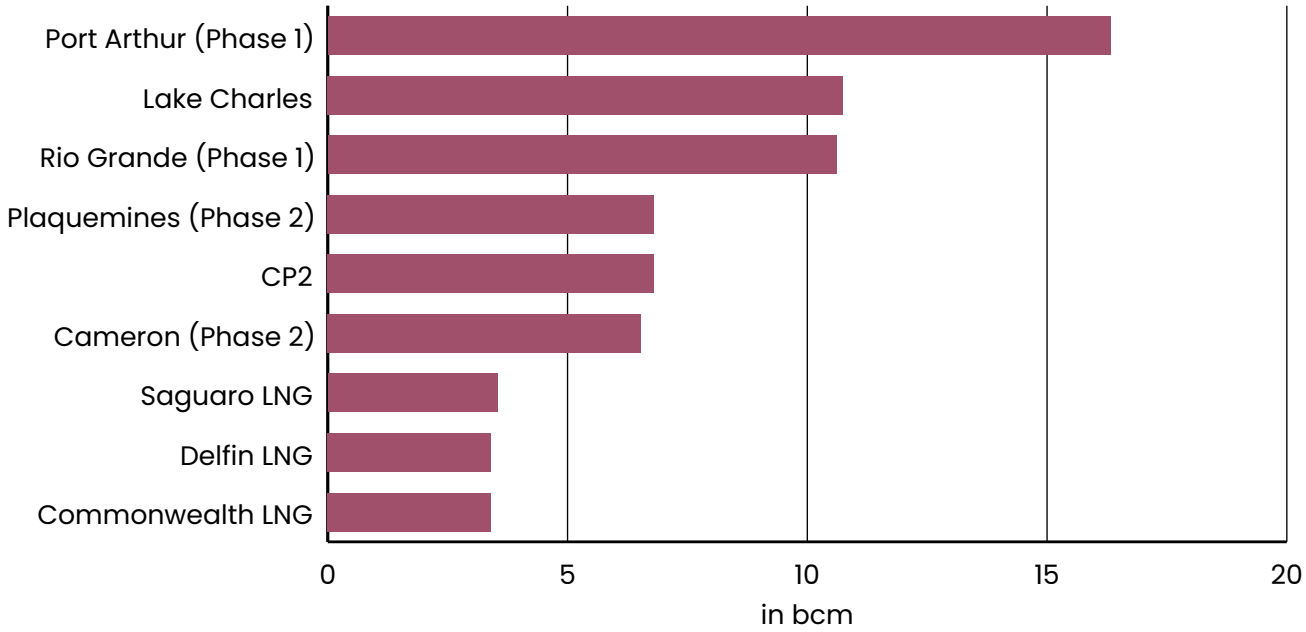
Long-term contracts are being pushed as a definitive solution to the short-term issue of European gas market instability. However, for most deals it is not clear yet when they will start delivering. We will see a peak in actual deliveries of this LNG probably only around 2026.[199] From then onward, apparently these companies will be contractually obligated to buy this LNG capacity for the next 15 or 20 years, essentially locking European energy supply in a costly and environmentally destructive future. For the short-term supply crunch, these deliveries will come too late.

Furthermore, these new EU LNG contracts are only one part of the story. Rystad assesses that, in 2023, 60% of the additional LNG going to Europe will be coming from portfolio traders: these are entities buying LNG from a wide range of suppliers across the world for resale to various customers.[200] They align with the nature of the US LNG industry, founded on supply agreements that provide flexibility for the destination of LNG shipments. These contract holders, and not the liquefaction companies or the US government, have the authority to dictate the destination of the LNG shipments.[201] European companies Shell and TotalEnergies, took the biggest part of the 2022 contracts, with half of them entering their portfolios. In absolute terms, they were also the ones signing the most contracts, with 20 portfolio contracts signed with US LNG producers, worth 34.4 mtpa. This is more than a quarter of all portfolio contracts signed.

The 2022 rush for contracts also pushed companies and portfolio traders to sign agreements with US terminals which are still at an early stage, awaiting their final investment decision (FID).

BNEF shows that US projects have been the largest beneficiaries of recent market shifts, making up all but one of the top nine projects by contracts signed in 2022.[202] This means that due to these contracts, these projects might reach their FID in the coming months. Note that in the table below, dating from January 2023 and showing projects in a pre-FID phase, Port Arthur LNG did get its FID in March 2023.[203] We may soon witness an expansion boom in US LNG infrastructure, which would aim to operate for decades to come.

Figure 21: LNG contract signings in 2022 for pre-FID projects in the US



Source: Greenpeace International based on data from BloombergNEF, converted to bcm

Dunkirk LNG: pushing for long-term contracts

Fluxys is determined to remain a major player in the European gas imports from the US through Dunkirk LNG. What the company needs for its stability in this market is also what will lock us into a fossil future: long-term commitments from the gas industry. Dunkirk LNG took a first step in this direction in February 2022, pushing for measures which would favour long-term deals, possibly until 2046.[204] Dunkirk LNG has two fixed long-term regasification contracts with EDF (8 bcm/y, see our box "Dunkirk terminal: The entry point for US gas into Europe") and with TotalEnergies (1.5 bcm/y), both running until 2036. The remaining capacity of 3.5 bcm is put on sale each year.[205] In 2022, Dunkirk LNG asked permission from the French Commission for the Regulation of Energy[206] to put its remaining primary annual capacity on sale for a period up to 2036, with the possibility to extend until 2046, with the selection of candidates hinging on the length of their offers. It also asked to increase the maximum amount Engie, one of its key users, could legally book, above 1 bcm. Furthermore it added to its selection criteria, enabling it to exclude demands for capacity coming from regions which could be subject to sanctions[207]. The Commission for the Regulation of Energy gave a favourable ruling on this proposal in April 2022.

And while a slowing economy due to strict Covid measures dampened China's energy demand, another reason it required less LNG from the US was the cheaper gas it could get from Russia. Chinese gas companies moved towards Russian LNG at prices below market rates in the weeks following the Russian invasion in Ukraine as reported by the Wall Street Journal.[208]

According to Chinese customs data, between February and April of 2022, China's imports of LNG from the US declined by 95% compared to the same period in the previous year, while its purchases of Russian LNG increased by 50%. Although there was a modest recovery in China's demand for US LNG in May, it remained significantly lower than in 2021.[209]

US LNG, Chinese profits

China has reportedly been reselling contracted US LNG cargoes to European buyers at a significant profit, benefitting from the price differential between the US and European markets. According to reports from both the Wall Street Journal[210] and Bloomberg,[211] China benefits from the increasing flexibility and liquidity of the global LNG market, which has made it easier for buyers to move cargoes between different regions.

Export terminals in the US - backed by European contracts

For all the terminals mentioned in this section, see our interactive map 3.

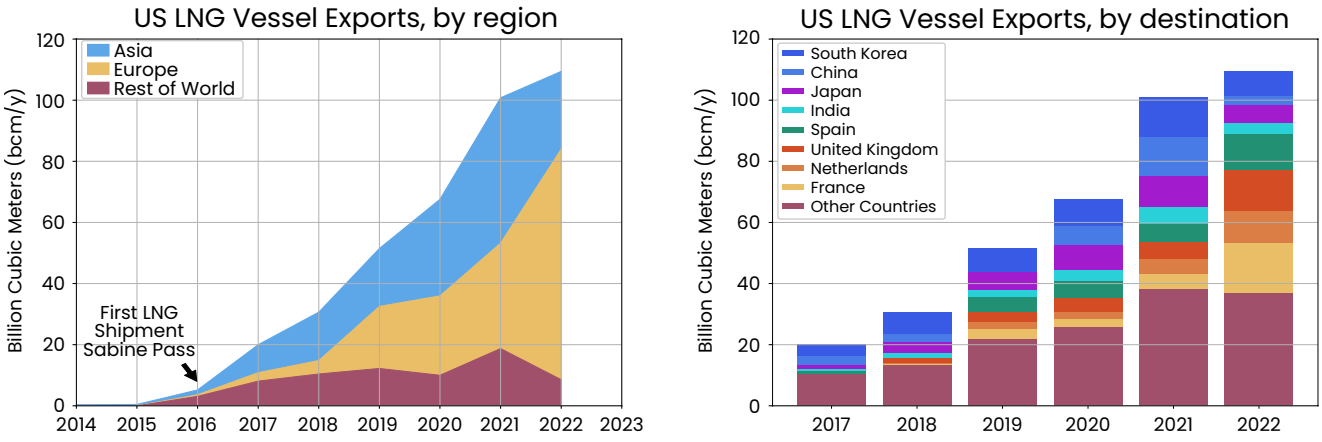
The shifts in global and European energy markets have kicked off an increase in LNG liquefaction capacity worldwide, with the United States – now the world's largest LNG exporter – leading this trend.[212] Several new US LNG export terminals are likely to get the greenlight in 2023, with many more waiting in the wings. The long-term LNG supply contracts – discussed in the previous chapter – are the key factor driving the construction of LNG export terminals in the US.

Turning methane gas into a supercooled and much denser liquid and loading it onto tankers is a complex, energy-intensive process which requires the construction of expensive units called liquefaction "trains." As a result, LNG exports are limited by liquefaction capacity. Because of their high building costs, in general, these projects must obtain significant financing packages to proceed to FID.

To reach FID, the project needs to show it has obtained the proper permits, lined up equity investors, and has signed the necessary construction and gas supply contracts. The most important permits to build and operate an export terminal are those from the Federal Energy Regulatory Commission (FERC) and the Department of Energy (DOE). Most crucially, lenders want to see a significant volume of long-term contracts signed with purchasers of the LNG, thereby guaranteeing future sales and cash flow sufficient to cover the debt payments. There is a fierce competition among the proposed projects to lock down long-term sales contracts, and hence be the first to reach FID.

Starting in 2016, exports of LNG from the United States have increased as fast as the industry can build export capacity. The shale revolution in the US ensured that sufficient gas supply is available for export, largely limited by the economics of building expensive liquefaction facilities. Relatedly, the 2015 decision to revoke the long-standing crude oil export ban[213] spurred a new boom in oil (and associated gas) drilling that was also destined for export markets. The figure below shows that Asia and Europe are key destinations for LNG exports, with a big surge of shipments to Europe in 2022.

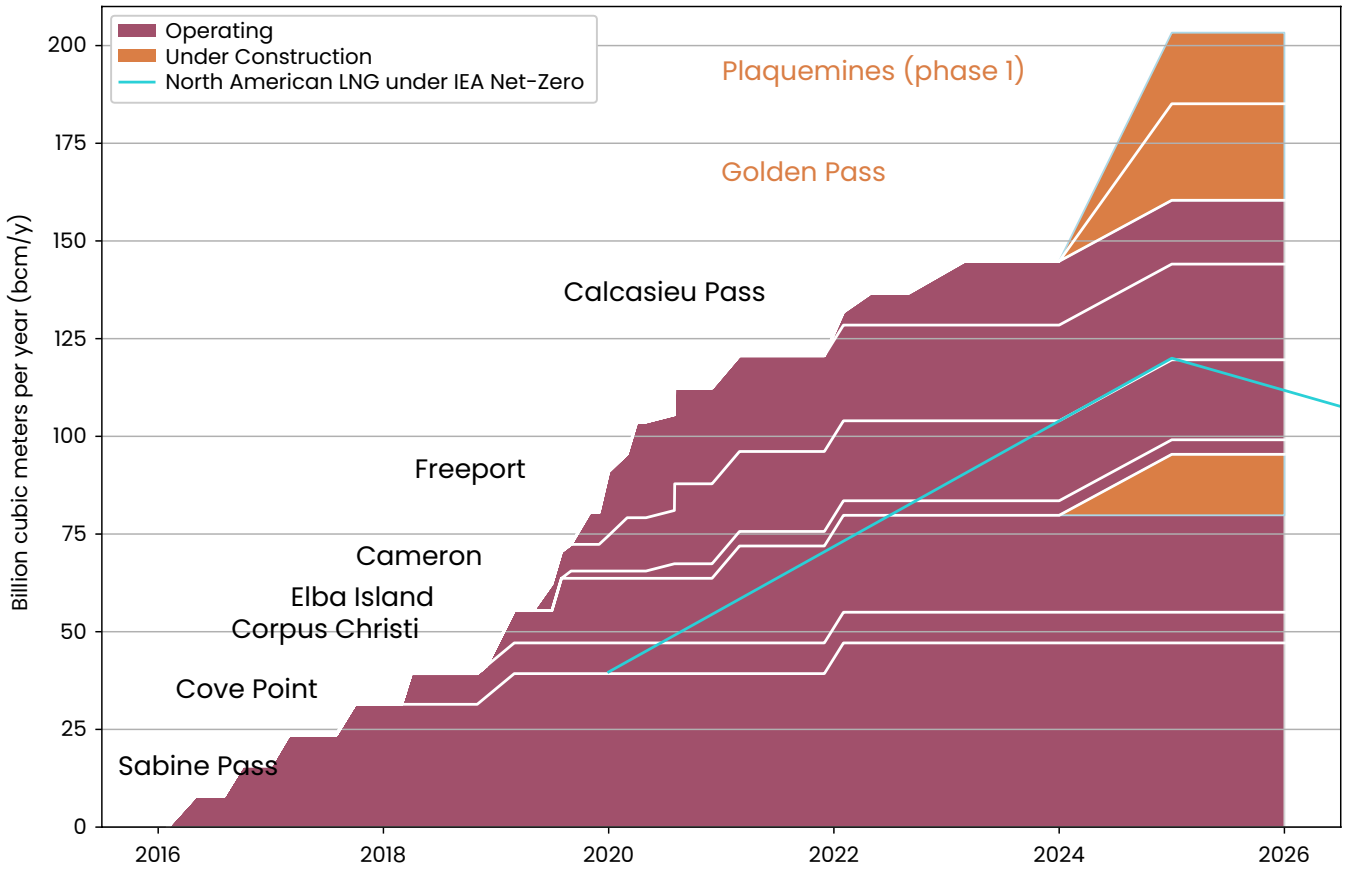
Figures 22 and 23: Increase in LNG exports from the United States.



Source: Greenpeace International, based on US EIA data, converted to bcm/y[214]

Seven LNG export terminals currently operate in the US, with a peak capacity of 145 bcm. The five largest of these terminals are located on the Gulf Coast of Texas and Louisiana (Sabine Pass, Corpus Christi, Cameron, Freeport, and Calcasieu Pass), with two smaller terminals (Cove Point and Elba Island) on the Atlantic coast. Two new Gulf Coast terminals (Golden Pass and Plaquemines LNG) are currently under construction, as is an expansion of Cheniere's existing Corpus Christi terminal. Completion of these three projects would increase US export capacity to over 200 bcm by 2025.[215] Port Arthur LNG is moving towards construction on two trains which could start production in 2027 and 2028. This would add another 18 bcm per year to US LNG export capacity.[216]

Figure 24: US LNG Export Capacity 2016 - 2026



Source: Greenpeace International, based on US EIA liquefaction capacity data. Note: assumes terminals under construction will start production over the course of 2024. Not shown: Port Arthur LNG and Plaquemines Phase 2 have also moved to start construction, but operation start dates are uncertain and likely post-2024.

The figure above shows the increase in US LNG export capacity over time as more liquefaction trains are brought online.[217] The green line shows the IEA's estimate of LNG exports from North America under its 1.5C-aligned Net-Zero Emissions (NZE) Scenario.[218] Under that scenario, global LNG trade peaks in 2025 and then declines rapidly, and estimated US LNG build-out is already significantly larger than those estimated traded volumes.

The table below shows the nine operating (blue) or under construction (green) LNG export terminals in the US. Several of these projects also have proposed expansions that have not yet been approved (red) or financed (yellow).

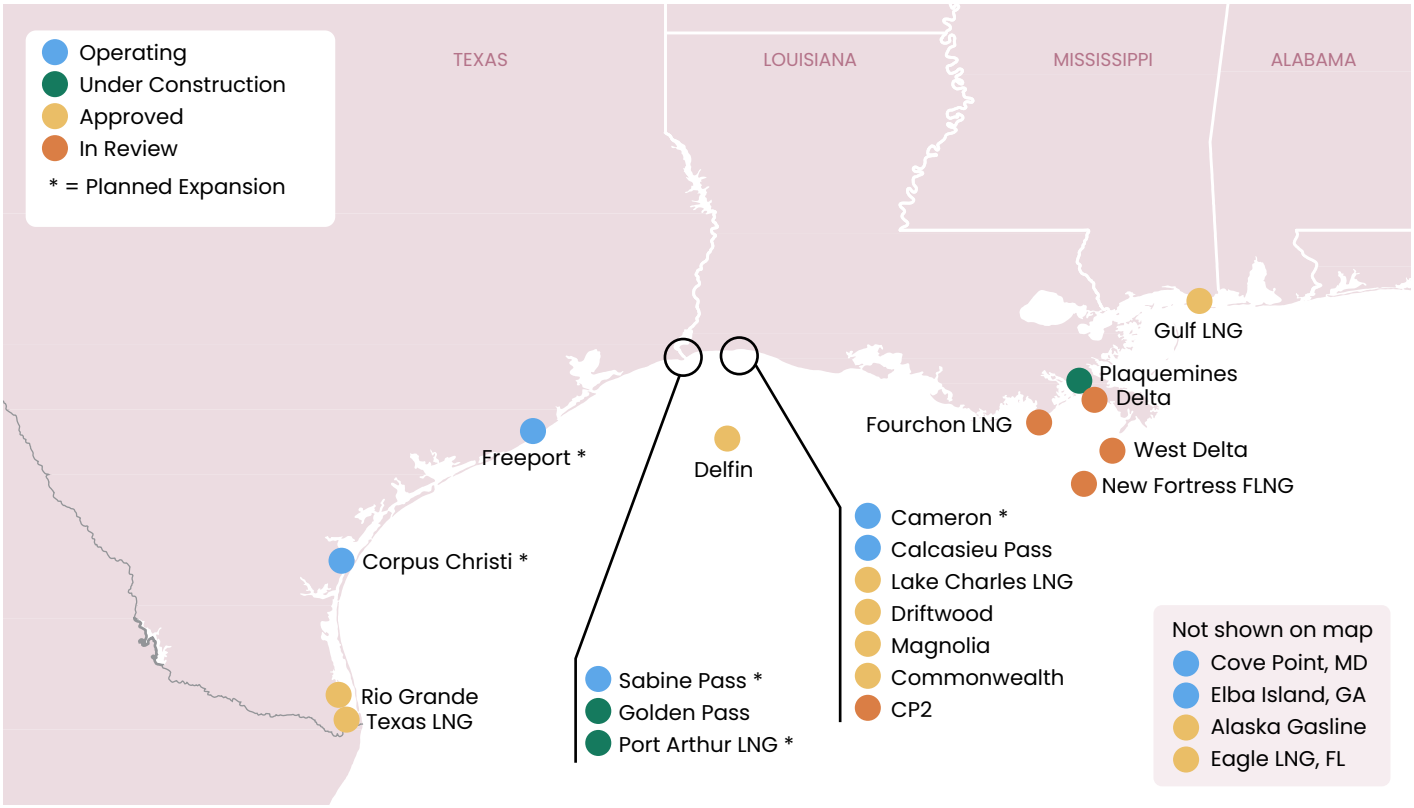
Table 3: LNG Export Terminals: Operating or Under Construction (as of March 2023)

Project	State	Owners	Status
Sabine Pass	Louisiana	Cheniere	Operating Additional expansion in pre-filing with FERC
Corpus Christi	Texas	Cheniere	Operating Stage 3 Under Construction Additional expansion in pre-filing with FERC
Freeport	Texas	Freeport LNG	Operating Train 4: FERC approved, awaiting FID
Cameron	Louisiana	Sempra LNG, Mitsui Group, TotalEnergies, Mitsubishi Corp, NYK	Operating Train 4: FERC approved, awaiting FID
Cove Point	Maryland	Dominion, Berkshire Hathaway, Brookfield Asset Management	Operating
Elba Island	Georgia	Kinder Morgan, Blackstone	Operating
Calcasieu Pass	Louisiana	Venture Global	Operating
Golden Pass	Louisiana	Qatar Petroleum, ExxonMobil	Under Construction
Port Arthur	Texas	Sempra, ConocoPhillips	Trains 1&2 - FERC Approved, FID March 2023 Trains 3&4 - Under FERC Review
Plaquemines	Louisiana	Venture Global	Under Construction

Source: Greenpeace International, from data provided by FERC,[219] EIA, and company press releases.

If the gas industry gets its way, this is just the start. Numerous other export projects along the Gulf Coast have been proposed (or revived) to take advantage of higher demand for gas due to the Ukraine crisis. The table below lists LNG terminal projects that have been proposed, but are not yet under construction, either because they have not yet been approved or have not yet reached FID. Even more projects could reach FID in 2023, with the most likely being Rio Grande LNG,[220] and Lake Charles LNG.[221] The recent contracts listed above in Table 2 illustrate the current momentum of these projects.

Figure 25: Map of operating and planned LNG terminals in the US Gulf Coast



Source: Greenpeace International, from data provided by FERC,[222] EIA, and company press releases.

The vast majority of these projects are located along the Gulf Coast with high potential to export LNG to Europe (the main exception being the Alaska Gasline project). We also note Sempra's Energía Costa Azul project, which is under construction in Mexico, and will utilise gas sourced from the US.[223]

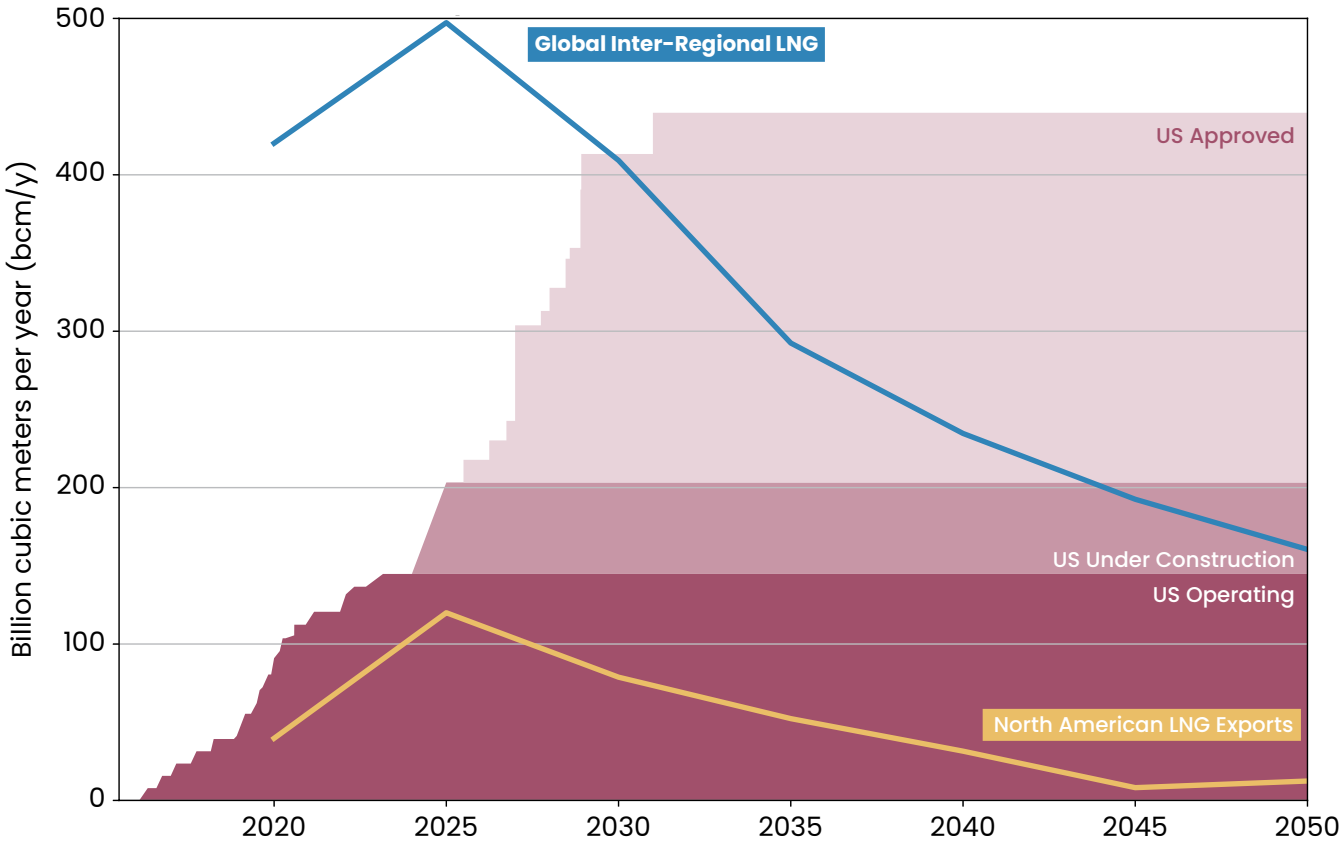
Table 4: LNG Export Terminals: Proposed, Awaiting Approval or FID (as of March 2023)

Project	State	Owners	Status
Rio Grande	Texas	Next Decade	FERC Approved, but delayed by court order, FID expected 2023
Lake Charles	Louisiana	Energy Transfer	FERC approved, FID expected 2023
Driftwood	Louisiana	Tellurian	FERC approved, some construction has begun, but project lost suppliers and FID has been long-delayed
Grand Isle FLNG	Gulf of Mexico offshore	New Fortress Energy	Under MARAD[224] review, self-financed
Texas LNG	Texas	Texas LNG	FERC Approved, but delayed by court order, awaiting FID
Magnolia	Louisiana	Glenfarne Group	FERC approved, awaiting FID
Eagle LNG	Florida	Energy & Minerals Group	FERC approved, awaiting FID
Delfin LNG	Gulf of Mexico offshore	Fairwood, Enbridge	MARAD approved, awaiting FID
Commonwealth	Louisiana	Commonwealth LNG	FERC approved, awaiting FID
Alaska Gasline	Alaska	Alaska Gasline Dev Corp	FERC approved, awaiting FID
Gulf LNG	Mississippi	Kinder Morgan +others	FERC approved, awaiting FID
CP2	Louisiana	Venture Global	Under FERC review
West Delta	Gulf of Mexico offshore	West Delta LNG	Under MARAD review
Delta	Louisiana	Venture Global	FERC pre-filing
Fourchon	Louisiana	Energy World	FERC pre-filing

Source: Greenpeace International, from data provided by FERC,[225] EIA, and company press releases.

These proposed and approved projects collectively would represent a massive increase in US LNG export capacity. It is not certain that all of these projects will be built, but the projects that have already been approved could more than double peak US export capacity to 439 bcm.[226] The estimated timeline for this additional LNG buildout,[227] in the figure below, shows that by 2030, US LNG by itself could be larger than the IEA's NZE estimate for ***global*** LNG trade.

Figure 26: Comparison of planned LNG capacity to IEA net-zero emissions



Source: Greenpeace International based on IEA, EIA and Sierra Club data

The signing of long-term supply contracts, including by European companies, is a critical factor in the build-out of US export terminals. Which is ironic, as this additional export capacity is not required to satisfy European demand. The Institute for Energy Economics and Financial Analysis (IEEFA) reported that the US can temporarily increase its LNG exports for the short-term supply crunch, without the need for new long-term contracts or infrastructure.[228] The combined capacity of the existing LNG export terminals in the US is more than adequate in order to meet the targets of an additional 15 billion cubic metres by the end of 2022 and 50 billion by 2030, as set out by US President Joe Biden. The market has already begun to accomplish this outcome, thus negating the need for any new LNG infrastructure.[229]

Dunkirk: surging emissions in the US

Europe is a key actor enabling the US fracking industry to continue its rapid expansion, whether through political alliances or regulatory adaptations, through direct financial support from European banks (see our chapter "Our banks are still investing in fracking though"), long-term contracts signed by European companies or the expansion of import terminals in Europe meant to store or regasify more LNG. The example of Dunkirk LNG, the biggest entry-point for US shale gas into Europe, allows us to connect these dots clearly and to showcase the snowball effect of imports in Europe on the expansion of the fracking industry in the US. This Fluxys facility is a historical entry-point for Cheniere's gas into Europe. All the contracts arranging the supply of US LNG to Dunkirk LNG are supporting the expansion of existing terminals or projects of new terminals in the US.

EDF, holding 61.5% of the regasification capacity of Dunkirk LNG,[230] has a 20-year deal with Cheniere in the US. It signed a first contract in 2014,[231] becoming "the first foundation customer on Train 3 of the Corpus Christi" and playing a crucial role in the FID on that part of the project (finalised in 2017). One year after closing this deal, EDF closed other deals with Cheniere,[232] in order to ship additional LNG to Dunkirk, coming from Sabine Pass LNG. EDF is now the 9th biggest client[233] of the Corpus Christi Liquefaction Project.

Among Cheniere's clients importing to Dunkirk, we also count Engie, Corpus Christi's 6th biggest client.[234] In the 2022 race for US LNG, Engie also stands out with major deals. It was the first European company to announce a major gas deal with a US company in the frame of the global energy crisis: on 2nd May, it closed a 1.75 mpta deal with NextDecade for their Rio Grande LNG project.[235] This purchase agreement made much more noise than the discrete extension of the Engie-Cheniere contract right after the start of the war and involving the Corpus Christi LNG facility (see our chapter "Messing with Emissions"). In June 2022,[236] Cheniere announced its FID to start stage 3 of the expansion of Corpus Christi LNG in order to produce more than 10 mpta additionally. At the end of the year, on 6th December, Engie also signed a 15-year contract[237] with Sempra Energy for its proposed Port Arthur LNG project. A FID for Phase 1 of this project was decided in March 2023, after signing contracts for its total capacity.[238] Port Arthur LNG will build[239] with two fossil gas liquefaction trains capable of producing, under optimal conditions, up to 13.5 mtpa in the aggregate, or approximately 18.36 bcm[240] of gas per year.

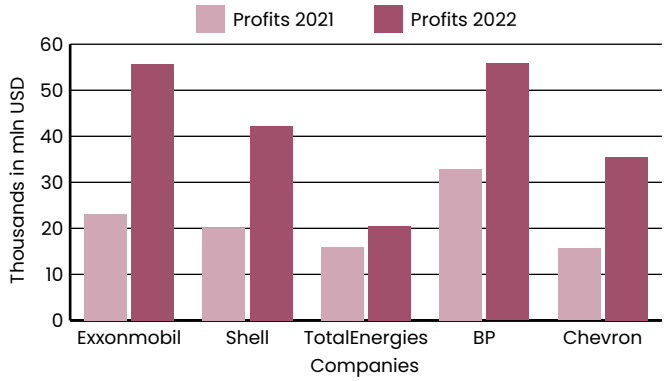
Finally, at the time of writing, NextDecade was negotiating a deal with TotalEnergies[241] for its Rio Grande LNG project, which will likely result in a positive FID, currently projected for Q2 in 2023. TotalEnergies would receive an equity investment and would push the contracted capacity from 64% to 86%.

Toxic snowball effect

Profits for the gas industry

Despite the unprecedented challenges faced by the world in 2022, including rising inflation, climate-driven disasters, and conflict, the fossil fuel industry reaped enormous profits. These were fueled by the world's first truly global energy crisis, which was sparked by Russia's invasion of Ukraine and resulted in sky-high wholesale gas prices, driving historic gains for oil and gas producers. According to Fatih Birol, the head of the International Energy Agency, the global oil and gas industry made a staggering $4 trillion (€3.68 trillion) in profits in 2022,[242] a remarkable increase from the average profit level of $1.5 trillion (€1.38 trillion) in recent years. Such profits led to accusations of "war profiteering" by US President Biden and warnings from UN Secretary-General Guterres that fossil fuel companies "have humanity by the throat."[243]

Figure 27: Profits "Big Five" fossil fuel companies active in the US LNG trade



Source: Greenpeace International, data from the financial statements of the listed companies[244]

The "Big Five" oil and gas companies (ExxonMobil, Chevron, Shell, BP, and TotalEnergies) revealed that 2022 was their most profitable year in history. This was due to increasing prices of oil and gas, which significantly boosted their revenues. In total, these five companies made €192 billion profit in 2022[245], up 95% from their €99 billion profit in 2021[246][247]. ExxonMobil and BP reaped the most reward, with Exxonmobil increasing their 2022 profits by 141% compared to 2021.

While millions of people are suffering from high energy bills, US LNG companies, are reportedly emerging as big victors in Europe's supply crisis[248]. Due to record volumes of exports to the EU, record prices paid, and record contracts signed in 2022, the year has been nothing less than historic for US LNG companies.

According to Reuters, prominent American gas companies such as Cheniere Energy Inc LNG, which is the largest US exporter, are among the primary beneficiaries due to their extensive long-term contracts to supply LNG signed in recent months.[249] Cheniere reported it doubled its revenues from 2021 to 2022.[250] Other major LNG players such as Sempra Energy have a similar story, reporting €13.3 billion in revenue in 2022, and an increase in net profits from 2021.[251]

PORTFOLIO TRADERS MADE A KILLING IN 2022

Not having to worry about production costs going up due to inflation or domestic policies impacting extraction sites, the middle men in the EU-US LNG trade are perhaps the ones who really held the golden ticket in 2022. At the peak in summer, a single LNG shipment could bring in €185 million in profits,[252][253] with gas traders raking in huge profits as a result. These traders include divisions of the big fossil fuel companies (such as Shell, BP, and TotalEnergies who have many portfolio contracts with US LNG producers), but also specialised energy trading companies such as Gunvor or Trafigura. These middle men in the energy business have a remarkably simple business model, and essentially exploit the differences between the energy prices on the American market and the European market.[254]

On average, US LNG is traded at prices linked to the Henry Hub index, the US reference gas price index. This means these traders could fill a tanker and send it across the Atlantic for around €55.31 million,[255] purchased at the low Henry Hub prices. On the other side of the Atlantic, this same shipment is sold on the spot market at the European prices of the Amsterdam TTF gas price index, fetching around €254 million.[256][257]

Using this business model, gas traders such as Trafigura and Gunvor have doubled their profits[258][259] in 2022, making it their most profitable year ever. In total, the three largest LNG portfolio players made more than €92 billion[260] in profits in 2022 according to S&P Global, with their market share rising from 17% in 2021 to 59% in 2022.[261]

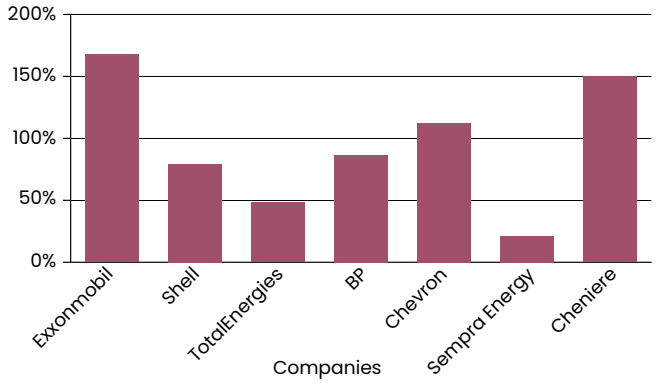
SHAREHOLDER PROFITS INSTEAD OF RENEWABLES

BP's CEO, Bernard Looney, has previously referred to the company as a "cash machine" due to its financial returns. BP's finance chief, Murray Auchincloss, has also reportedly admitted that the company may be receiving more cash than it knows what to do with.[262] 2022 truly has been a bumper year for these companies.

It seems a lot of the profits made from high energy bills are going straight to shareholders' pockets in the form of dividends and share buybacks. Despite the oil and gas industry's claims of taking action on the climate crisis and shifting their business models, their enormous profits mostly benefitted their shareholders. Opponents argue that these amounts could have been better invested in renewables. Shell, the biggest European fossil fuel company, paid €24 billion in profits to its shareholders, but invested only €3.2 billion in renewable energy in 2022.[263][264] The top five oil and gas companies, as a group, paid €94 billion of their 2022 profits directly to their investors. According to Global Witness, this includes distributing €44.25 billion in dividends and utilising €50 billion to buy back shares.[265] US LNG producer Sempra Energy[266] paid €1.3 billion in dividends, while Cheniere paid €355 million in dividends and €3.3 billion in share buybacks.[267] Even companies such as Engie, a large purchaser of US LNG at high prices was able to pay a €2.5 billion dividend to its shareholders.[268]

Added to this, respective stock values went up massively in 2022, generating an astronomical amount of wealth for their shareholders. ExxonMobil grew by 167% from 1 January 2021 to 31 December 2022, adding €259 billion in value for its shareholders.[269] Cheniere comes second with a 150% stock increase, adding €20 billion in value for its 83 stockholders.[270] Sempra Energy had the most modest growth of these companies, but still saw steady growth with a 21% increase.[271] To put this in perspective, the S&P 500, an American stock index used as reference, only grew by 2% that period.[272] In total, the Big Five plus Cheniere and Sempra added €622 billion in value for their shareholders.[273]

Figure 28: Stock value increase selected fossil fuel companies January 2021 - December 2022



Source: Greenpeace International, data from Google Finance

What could one do with these massive profits

The €94 billion in 2022 dividends and share buybacks paid to shareholders would be better invested into increasingly affordable renewable energy. This amount of money is equivalent to the levelized cost of 3090 TWh of onshore wind energy, at USD 0.033/ kWh (0.030 EUR) according to IRENA, the agency for renewable energy.[274] This is equivalent to 79% of the 2021 US electricity consumption[275] and to 111% of the 2021 EU electricity consumption.[276]

Alternatively it could cover almost 30% of the €322 billion bill needed to rebuild Ukraine from the war according to the World Bank[277] [278].

Costs to European and US consumers

PAYING THE BILL THREE TIMES

1. Devastating energy bills

One of the most crucial aspects to emphasise in this report is the actual impact on energy consumers who were burdened with exorbitant costs due to record-high gas prices. The gas and electricity price crises, coupled with soaring inflation, has resulted in an increasing number of people being forced to make difficult choices, such as prioritising between buying essentials like schoolbooks and clothing, or providing food for their children. In the UK, a survey revealed that a quarter of respondents were intending to prioritise purchasing food over heating their homes during the winter months.[279] Similarly, in Europe, studies report that more than 50 million individuals or 25% of households may find it challenging to pay their energy bills.[280] In an October 2022 survey, three out of four Europeans responded to have cut back on food and everyday items in order to pay the rising bills.[281] At a time when fossil corporations were raking in huge profits, those most vulnerable to volatility saw an increasingly large proportion of their monthly income disappear. According to Eurostat trade data,[282] the EU's energy import bill was €221 billion in 2020. In 2021, the bill almost doubled to €390 billion. And in 2022, the year of record prices, the EU energy import bill more than doubled again to €834 billion. All while consuming less energy than ever in Europe.[283]

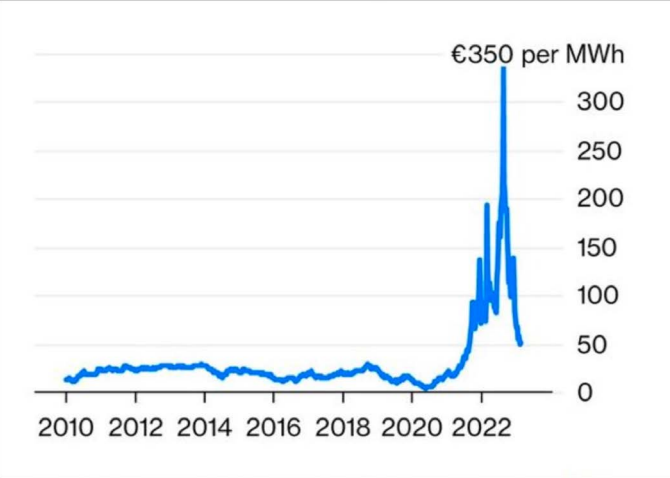
These painful energy bills have not been limited to European consumers. A quarter of US respondents who were polled in the summer of 2022 said they had forgone necessities like food or medicine to pay their energy bill.[288] In the bidding war of Asian and European companies for US LNG, American domestic consumers end up as collateral damage. This rapid price increase exposed Americans to higher prices and increased volatility.[289] The most apparent example of how the US domestic market is linked to global LNG trade was the explosion at the Freeport LNG terminal in June 2022. The day after the explosion, the US domestic gas price "tumbled" reportedly because the closure of this export terminal left more supply for American consumers.[290] In Europe, the markets made a reverse move and the price rose substantially after the news of the explosion.[291] Both markets jumped up and down during the weeks after in reaction to updates regarding the plant's restart.

And while prices in the EU have stabilised since their peak in August 2022, they are still twice as high as 2010-2020 averages, with reports indicating this is likely to remain the case for the foreseeable future.[292] Even though prices are lower now, the European energy crisis is far from over, with winter 2023-24 being predicted to be even more difficult to weather.[293]

EU's energy import bill invested in renewable energy.

The total €834 billion EU 2022 energy import bill[284] would also be better dedicated to renewable energy. Renewables are cheaper than ever, with levelized costs of USD 0.033/kWh for onshore wind according to IRENA.[285] The EU's energy import bill is equivalent to the costs of a whopping 27648 TWh of electricity. This is 10 times the amount of the current 2785 TWh electricity generation in the EU (2021),[286] or 4 times the total 6674 TWh total energy production in the EU.[287] While it will take a huge effort of the EU to reach its energy transition targets, these comparisons show that the high prices paid by Europeans this year could have been better invested in the future.

Figure 29: Gas price evolution in the EU 2010 - 2023



Source: ICE Ltd and Bloomberg

It seems that Europe is not returning to cheap and plentiful gas, and one reason is our newfound reliance on LNG, and new US contracts providing it. LNG has been a costly alternative for Russian pipelined exports mainly due to two reasons: first, transporting LNG across the globe is an energy and capital intensive process; and second, the flexibility of LNG also means its prices are pumped up due to bidding wars. LNG supply is loyal only to the highest bidder.

LNG is an inherently expensive fuel

There are three phases in the production of LNG, each of which are very expensive:

1. **Liquefaction plant**
   The first step in the US LNG chain is a liquefaction plant which liquefies shale gas into LNG. These plants are massively expensive, running into billions of dollars per terminal. The total cost of the Sabine Pass and Corpus Christi LNG terminals, both essential for the export to European markets, is projected to be €44 billion.[294][295]
2. **LNG tankers**
   The second step is the transport across oceans in specialised LNG tankers. Due to the special tanks used to keep the LNG at a temperature of -162°C, these vessels are notoriously expensive. A standard 135,000 ton LNG tanker costs €220 million,[296] compared to €78 million for a standard 280,000 ton crude oil tanker.[297] [298]
3. **Regasification plant**
   The third step consists of reheating the LNG back into a gas for injection into the grid. Besides being very energy intensive, these plants cost about $1 billion (€0.92 bln) apiece and take several years to build.[299] In Germany, the planned LNG import terminals will reportedly already cost double than first projected: €6.56 billion up from €3 billion in the 2022 budget.[300]

LNG only comes close to being cost-competitive with pipelines over long distances. Depending on several factors, this break-even point occurs between 3,000 to 7,000km.[301] While no-one is proposing a pipeline across the Atlantic Ocean, it is important to realise that LNG is inherently expensive due to this process, and consumers in the US and Europe are paying the price.

This high production cost is exacerbated by the flexibility LNG transport offers. Import countries are no longer reliant on fixed pipelines but can import from across the world. However, this flexibility brings competition, and LNG answers only to the highest bidder. For a limited supply of global LNG, Europe is currently competing with buyers from the rest of the world, mainly wealthy Asian countries such as Japan and South Korea. In typical years, Asian buyers outbid European ones, who then buy the leftover capacity. But in 2022 this was reversed. European countries were willing to pay higher prices, despite the social costs following that buying spree. Due to the ensuing bidding war, LNG spot prices reached record highs in the winter of 2021 and the early months of 2022.[302]

As a result, global LNG volumes rose by only 5.5% in 2022, but doubled in value to an all-time high of $450 billion (€415 bln)[303] according to the IEA. Average spot prices rose to six times their historical norms, while France's net import costs for gas almost quadrupled from €9.4 billion between January-October 2021 to €36.6 billion for the same period in 2022.[304]

The estimated cost of the LNG terminals in construction and proposed would be a whopping €22.1 billion according to the 2023 Gas Tracker Report. Adding to this another estimated €31.4 billion in proposed pipelines to connect it all and the EU ends up with a total bill of €53.5 billion in new gas infrastructure[305].

2. The tax bill: LNG expansion is made possible using our taxes

While fossil fuel companies have been making historical windfall profits during the EU energy crisis, at the same time a lot of public money has been going to them in direct support or indirect support for the EU consumers to help them pay their energy bills. First of all, the policies implemented to soften the energy crisis end up on tax bills. Bloomberg calculated the energy crisis has cost the EU roughly €920 billion in bailouts, subsidies, energy purchases, etc. and it is still expected to last years.[306] Meanwhile, national governments committed roughly €758 billion in aid packages to offset the rising cost of energy according to Bruegel research,[307] at a time of rising interest rates and thin fiscal capacity. In economics this is known as a recipe for accumulating debt, enforcing austerity and cutting back on public services.

Second, fossil fuel companies receive public money in the form of tax breaks and subsidies. A report by Climate Action Network found that European countries spend more than €112 billion per year subsidising oil, gas and coal production or consumption.[308]

And third, research done by Investigate Europe uncovered that the EU will be spending billions of euros from the post-Covid recovery fund on new fossil fuel infrastructure. A significant portion of the subsidised loans available through the recovery plans - up to 30% or €67.5bn out of €225bn - could end up being used to fund new LNG terminals and pipelines connecting them to the grid.[309]

3. Our future bill: the stranded assets

A recent study by researchers from a group of UK Universities[310] sheds light on the ownership of over 43,000 oil and gas assets, revealing the parties that will ultimately suffer the consequences of misguided investments that result in stranded assets.

The study shows stranded assets (see box "Stranded assets - Paying twice") lead to significant losses for their owners. Globally, a considerable portion of future stranded assets is owned by pension funds that invest their members' savings directly into other companies. When an asset becomes stranded, the anticipated payback for the owner is lost. In such cases, the cost of extracting the fossil fuel exceeds the selling price, resulting in significant losses for the company's shareholders.

The study also found private individuals own more than 50% of the assets at risk, and a surprisingly large part of the losses are borne by ordinary people with pensions and savings invested in managed funds, which could potentially exceed a quarter of all losses. These shareholders include individuals and companies, which, in turn, have their own shareholders. In essence this means consumers in Europe and in the United States tomorrow will be paying for the reckless investments of gas companies today.

The consumer pays three times

The high cost for energy has been paid first by European and American consumers throughout 2022, with painfully high energy bills, which will remain high for years. A second bill will be paid through the taxes used to finance the myriad of energy policies and fossil subsidies. And finally, a third bill will be presented to EU and US consumers when the new LNG projects prove to be stranded assets and their losses will be paid through our pension funds and banks. This will be a 'bitter bill' to swallow.

Stranded assets - Paying twice

Constructing numerous new LNG terminals poses a significant drawback due to their incompatible timelines, climate objectives and the pace of the energy transition. The construction of new LNG terminals takes years, raising doubts about their relevance to the current energy crisis. Furthermore, once built, LNG terminals have an anticipated operating lifespan of several decades, which means anything built in the mid-2020s could potentially continue to operate until the second half of this century. This would undoubtedly thwart our global climate objectives. Alternatively, if the terminals are decommissioned before the end of their anticipated lifetime, investors will be left with stranded assets. So building a series of new terminals effectively leads to a lose-lose situation. Europe has concrete climate goals it wants to reach by 2030, and wants to become net-zero by 2050. On the one hand, the new LNG import terminals in the EU will become worthless in a net-zero Europe, while on the other, gas demand from the EU will decrease, rendering the new US LNG export terminals equally useless.

Research from the University of Cambridge indicates roughly half of the world's fossil fuel assets may become worthless by 2036 in the context of a net-zero transition.[311] Countries that are slow to decarbonise are expected to suffer, while early adopters of renewable energy will profit. This shift highlights the risk of producing more oil and gas than future demand requires, potentially creating stranded assets, costing people across the world $11 trillion (€10.14 tln) in value that could become worthless.[312]

The most vulnerable assets are unconventional oil and gas fields in remote or technically challenging environments, such as Canadian tar sands, US shale, and the Russian Arctic. In a worst-case scenario, investing in fossil fuels until demand falls could lead to a financial crisis on the scale of 2008 according to the researchers.[313] A net-zero scenario, which is the US government's[314] as well as the EU's[315] target for 2050, would render 62% of all US fossil fuel assets stranded. This would shrink their value from €5,178 billion now, the highest amount in the world, to €3,228 billion[316]. Furthermore, researchers are seeing a "rat race" to sell as much fossil fuel as possible before assets are stranded, which may result in unconventional sources of fossil fuels, such as shale gas, being stranded first.

Costs for the Global South

But if the main costs of the current LNG expansion for the Global North countries are in the long term due to the stranded assets and broken climate targets, the immediate costs have already been hitting the Global South hard.

While Europe has not seen blackouts this winter, as Russian President Vladimir Putin had threatened,[317] the high prices Europe was willing to pay for the LNG that replaced the piped Russian gas, have resulted in a price competition which saw countries from the Global South outbid in the race to secure their energy needs.

The Ecowrap research report that was published in September 2022 by the State Bank of India (SBI) has clarified that "(s)udden shortage of gas in EU27 has impacted the price of natural gas and concomitantly disrupting the supply in other regions. In South Asia, India, Pakistan, Sri Lanka, and Bangladesh are experiencing difficulty in sourcing gas."

By October 2022, a power outage in Bangladesh plunged around 80% of its population into darkness. Three quarters of the country's electricity came from imported gas. But the hike in prices meant the country could not afford to buy as much gas as needed. The people of Bangladesh started facing frequent power cuts in an attempt of the government to ration supplies[318].

In Sri Lanka, a nation vulnerable to disruption in supply chains, skyrocketing inflation, corruption, debt, and socio-economic challenges, the spike in prices saw its energy and economic sectors hit the hardest, pushing the country into economic collapse.[319]

Pakistan, the fifth most populous country in the world, agreed on long-term contracts with Italian and Swiss gas traders over ten years ago, to protect itself from extreme international price hikes, only to see those companies defaulting on their contracts to deliver LNG to the country.[320] This arbitrary behaviour of the global gas companies saw parts of Pakistan experiencing planned blackouts of more than 12 hours, during the heatwave of 2022.[321] In January 2023, a breakdown in the grid triggered yet another outage leaving 220 million people without electricity at the peak of winter.[322] The electricity shortage added to the estimated €37 billion[323] in damage caused by catastrophic flooding in 2022, a budget deficit, and a debt load that is bringing Pakistan to its knees.

The ease with which fossil fuel companies allegedly breach a contractual obligation,[324] illustrates again that LNG supply is loyal to the highest bidder no matter the economical, social and environmental costs.

Faced with similar gas shortages, India, the world's most populous nation, increased coal imports, diluted environmental laws to make it easier for some mines to raise production, and used emergency laws to reopen coal-fired power plants.[325]

China has also turned back to coal,[326] embarking on a renewed coal power boom in the second half of 2022,[327] while countries in Africa, Asia and Latin America increased their use of coal and had to evaluate their energy sources and supply. Those emergency steps taken by countries who can't afford the violent price race for energy, have led the IEA to announce in the summer of 2022, that "global coal demand is set to return to its all-time high in 2022."[328]

Across the Global South, vulnerable households have been hit the hardest. Even before the Covid pandemic and the war in Ukraine, across sub-Saharan Africa and South Asia, according to the Clean Cooking Alliance some 733 million people still lacked access to electricity and 2.4 billion people had no access to clean cooking.[329] Today, these figures are reportedly even worse, as household budgets have been constricted and families returned to using dirtier technologies,[330] which often impacts women and girls the most.[331]

The energy price shock wave did not spare Latin America either. Even though some oil exporting economies could have benefitted from high energy prices, the immediate effect has been rising energy prices all over the continent, hitting low-paid workers the most and increasing poverty.[332] Growing public anger forced politicians to limit price hikes, cut taxes, and increase fuel subsidies in an attempt to restrain the crisis.

The current economic situation, combined with a return to, and expansion of the most polluting fossil fuels is bad news first and foremost to the Global South. Those directly affected, not just by the lack of access to electricity, but also by the local pollution, climate crisis and lack of mobility, are situated in Africa, Asia and Latin America.[333]

Ultimately, the Global South will also pay the higher price in the future, facing higher debts, climate change vulnerability, pollution, and poverty. As Europe expands its support for destructive development of

new fossil fuel extractions, particularly in Africa[334], the wealthiest nations in the world, tightening their monetary policies[335] and driving up the cost of debt, also make it harder for countries in the Global South to borrow money for development of renewable energy.

How replacing pipelined gas by LNG jeopardises EU climate targets

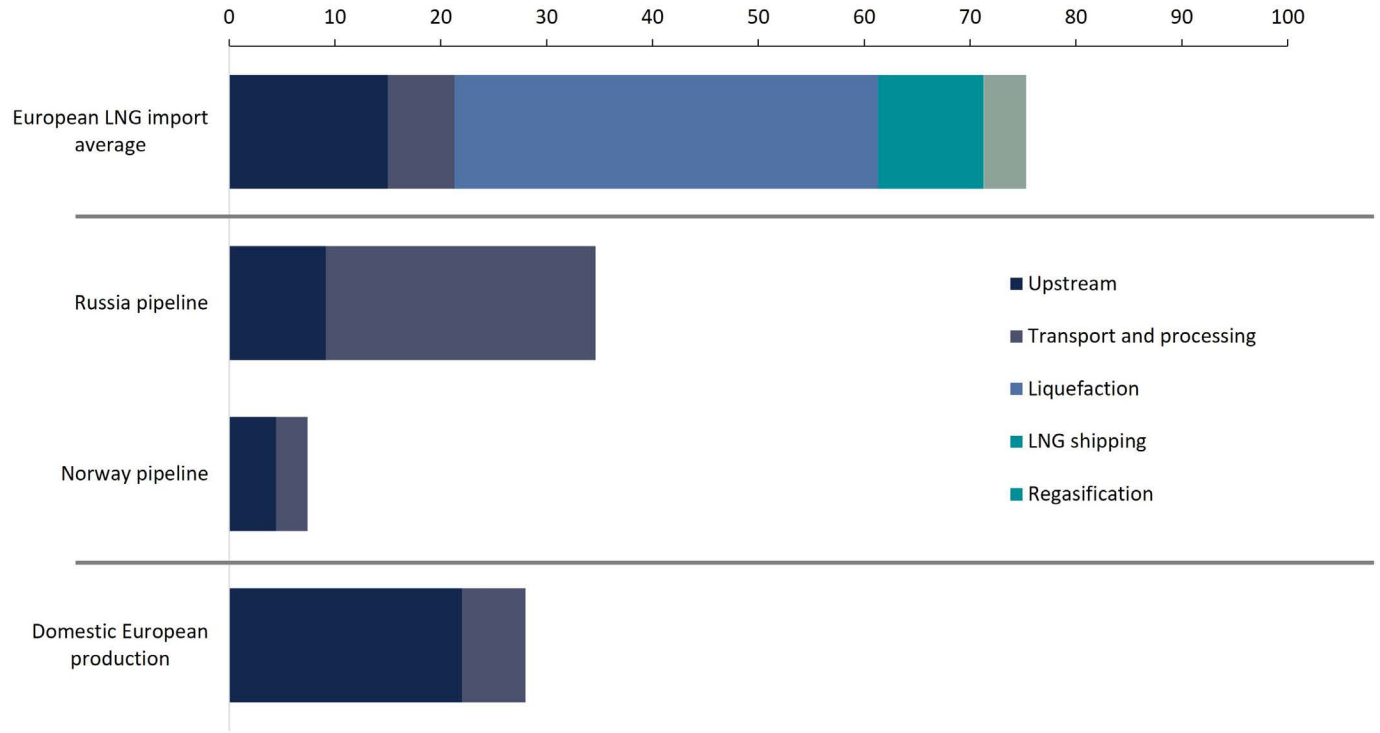
The LNG boom replacing pipelined gas raises grave concerns about the EU energy transition away from fossil fuels, and the energy future of the continent.[336] EU climate targets are being jeopardised by the expansion of LNG infrastructure and contracts, in contradiction with the ideas at the heart of the REPowerEU plan,[337] which aim at reducing dependence on Russian fossil fuels and fast forwarding the green transition. This plan would build further upon other EU climate policies such as the EU Green Deal,[338] and the EU's long-term growth plan to make Europe climate neutral by 2050. This target is enshrined in the European Climate Law,[339] as well as the legally binding commitment to reduce net GHG emissions by at least 55% by 2030, compared to 1990 levels. The European Commission presented its 'Fit for 55' package[340] of legislation in July 2021 to implement these targets; these proposals would lower gas consumption by 30% by 2030, with more than a third of such savings coming from meeting the EU energy efficiency target.

The European shift to LNG in 2022 entails three main obstacles for the EU climate goals. First, LNG is more CO2 intensive than the current EU gas imports. Second, the timing of the newly signed contracts and proposed infrastructure is running afoul of the timeline of the climate targets. And third, the fracked LNG from the United States is among the most polluting and dirty forms of energy in the world, according to satellite research that measured its methane leakage.[341]

CO2 FOOTPRINT

According to a recent analysis by Rystad Energy, the rise of imported LNG will drive up European CO2 emissions by 35 million tonnes the coming year, due to the extra emissions attributed to the energy intensive LNG process.[342] This is equivalent to the annual CO2 emissions of EU countries such as Slovakia or Denmark.[343] Only looking at LNG's carbon dioxide (CO2) footprint, Rystad finds it has the highest emission intensity among fossil gas sources.

Figure 30: CO2 Emission intensity (from wellhead to market) for gas supplies to Europe



Source: Rystad Energy research and analysis, in kg CO2 per barrel of oil equivalent[344]

The LNG value chain is inherently carbon intensive, with liquefaction and transport across oceans contributing to a carbon footprint that is up to four times higher than pipelined gas, according to Rystad Energy, depending on the source of the gas and the distance from wellhead to market. In 2020, LNG cargoes coming into Europe ranged from 40 kg of CO2 per barrel of oil equivalent (boe) to more than 150 kg CO2/boe, with an average of 75 kg CO2/boe. European domestic production (30 kg CO2/boe) and pipeline imports (35 kg CO2/boe or lower) are thus less than half the average of LNG imports.[345]

The Sierra Club developed a US LNG tracker,[346] which, among others, gives an estimate of projected emissions for future projects, like the Port Arthur LNG project which features in the case-study for this report.[347]

Currently, Corpus Christi and Sabine Pass have an annual project capacity of 45 million tonnes LNG, which equates to 273 million tonnes CO2eq[348], or the equivalent of the annual emissions of 60.7 million cars.[349] For all operating US LNG terminals this equals the emissions of 124 million cars.

However, with the planned expansion of these two terminals plus the expected emissions of the Port Arthur terminal, their carbon footprint would skyrocket. The LNG to be shipped from these three LNG terminals (85 mtpa) could lead to annual lifecycle emissions of 516 million tonnes CO2eq. This equates to about 114 million cars, and exceeds the combined GHG emissions of France and Belgium in 2020.[350]

Adding up all operating, under construction and approved LNG terminals in the United States, with a project capacity of 301 mtpa, current GHG emissions would more than triple and be equal to the annual emissions of 488 coal plants, or 393 million cars.

When looking at the environmental cost of the imported US LNG to France and Belgium, the impact on the planet is striking. In 2022, Belgium and France imported 18.25 billion cubic metres of LNG from different US LNG terminals, which is equal to 30% of the combined Belgian and French gas consumption in 2021.[351] When we account for the average 6 million metric tonnes of CO2e per million tonnes of LNG that Sierra Club calculated, we end up with a massive footprint of 80.46 million tonnes of CO2 equivalent. This is as much as 20% of the total combined CO2 Belgian-French GHG footprint.[352]

If the EU LNG terminals that are under construction or proposed would start production, this would result in a whopping 950 million tonnes of CO2-eq per year associated with these terminals.[353] This is the equivalent to the annual emissions of 211 million cars[354] or about a third of the EU GHG emissions in 2019.[355]

OPERATING TIME OF NEW INFRASTRUCTURE IS LONGER THAN CLIMATE TARGETS ALLOW

Europe's plans to build new LNG import terminals and sign long-term import deals could hinder the continent's decarbonisation targets and impede the energy transition.[356] As detailed earlier, the vast majority of new LNG capacity will not be available in time to address energy security issues for this and next winter, which is the critical period. Furthermore, the demand for LNG is not expected to grow at the same pace as the new LNG facilities are expected to be built.[357] In addition, 15-20 year-long gas deals signed recently run contrary to EU law, which targets a 35% decrease in gas demand by 2035.[358] The rush for new, non-Rus-

Table 5: Total emissions attributable to US LNG

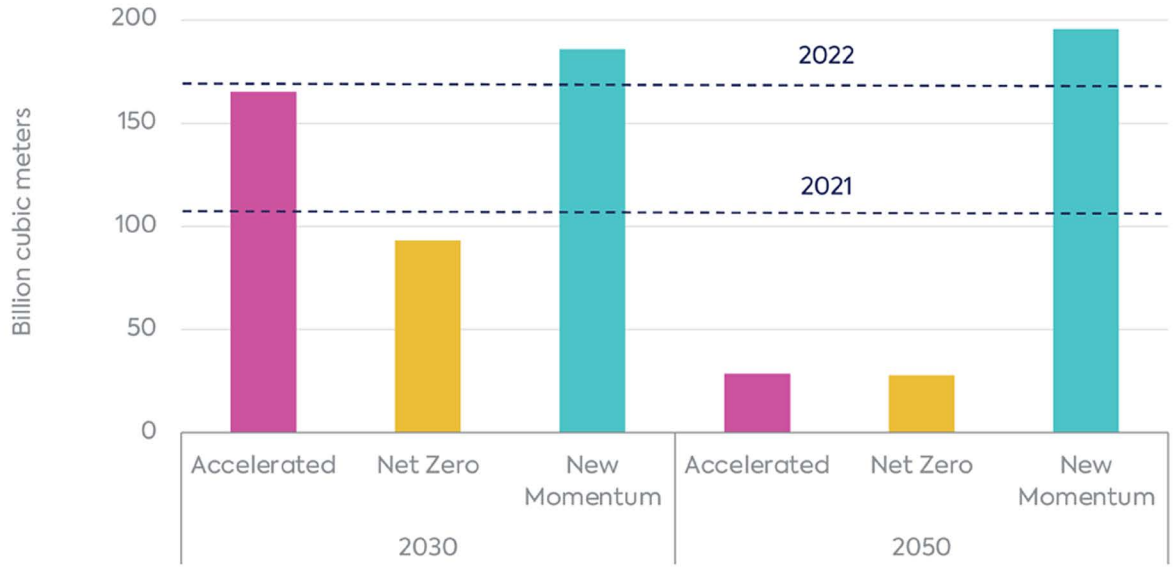
LNG terminal	Project capacity (mtpa)	Annual GHG emissions (Mton CO2e/y)	Equivalent: Coal plants	Equivalent: Cars
Corpus Christi	15	91	24	20,250,255
Sabine Pass	30	182	48	40,500,511
Total annual emissions of operating US LNG terminals	92	557	149	123,949,365
Future annual emissions of US LNG terminals, including operating, under construction and approved terminals	301	1824	488	393,127,263

Source: Greenpeace International based on data extracted from the Sierra Club LNG Tracker

sian gas supplies could lead to unnecessary gas lock-in for too long. According to Climate Action Tracker, the expansion plans will compromise meeting the 1.5°C limit, with the capacity now under construction coupled with expansion plans potentially increasing emissions by over 1.9 GtCO2eq per year in 2030 above emission levels consistent with the IEA's Net Zero by 2050 scenario.[359]

The figure below from BP Energy Outlook details the proposed LNG need for 2030 and 2050 in three different scenarios.[360] The "New Momentum" scenario shows the projected European LNG imports if the current LNG boom persists. The "Accelerated" scenario is broadly in line with the legally binding Paris Agreement. Whereas the "Net Zero" scenario is even more ambitious and shows how little LNG Europe can import if it wants to keep its net zero emissions target by 2050.[361]

Figure 31: European LNG imports by scenario



Note: The three scenarios in bp Energy Outlook are New Momentum, Accelerated, and Net Zero. New Momentum is designed to capture the current broad trajectory of the global energy system. Accelerated and Net Zero are broadly in line with the "Paris Agreement consistent" Intergovernmental Panel on Climate Change (IPCC) scenarios and explore how different elements of the energy system might change in order to achieve substantial reduction of carbon emissions.

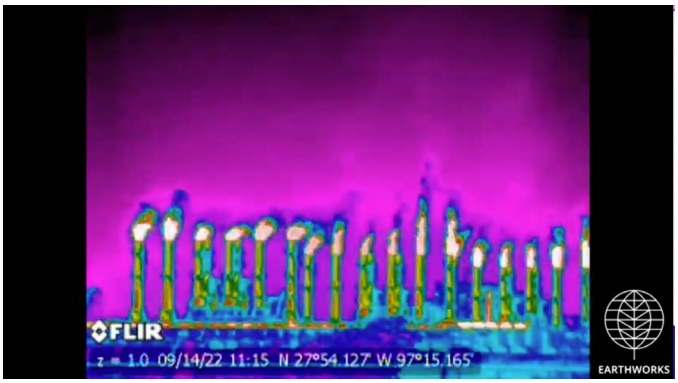
Source: bp Energy Outlook 2023; 2022 estimates based on Bloomberg terminal, "LNG Imports by Origin," accessed January 24, 2023.

Source: BP Energy Outlook 2023

METHANE LEAKAGE ALL ACROSS THE US GAS SYSTEM, MAKING US FIELDS THE DIRTIEST IN THE WORLD

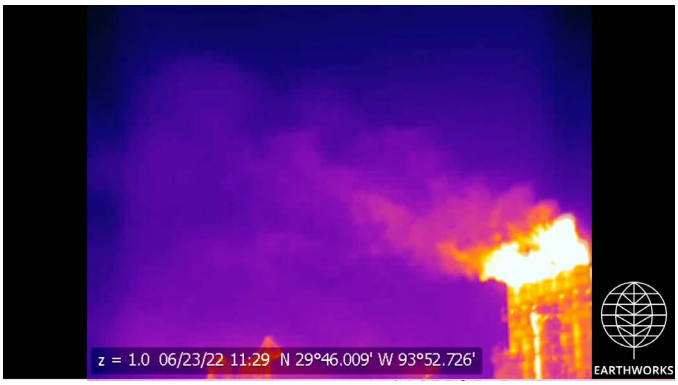
The CO2 emissions attributed to LNG are only the beginning. While CO2 involved in the energy intensive LNG process constitutes a large share of the total carbon footprint of LNG, it is only a part of the story. LNG is mainly composed of methane (CH4), which releases CO2 when it is burned for energy. But at every stage of the lifecycle, from extraction to power generation, gas leaks occur.[362] When this methane leaks into the atmosphere it has more than 80 times the warming potential of CO2[363] in the short term, and thus becomes a significant global warming contributor.

This video shows the methane leaks from Corpus Christi: https://www.youtube.com/watch?v=3AzNTty7WdU



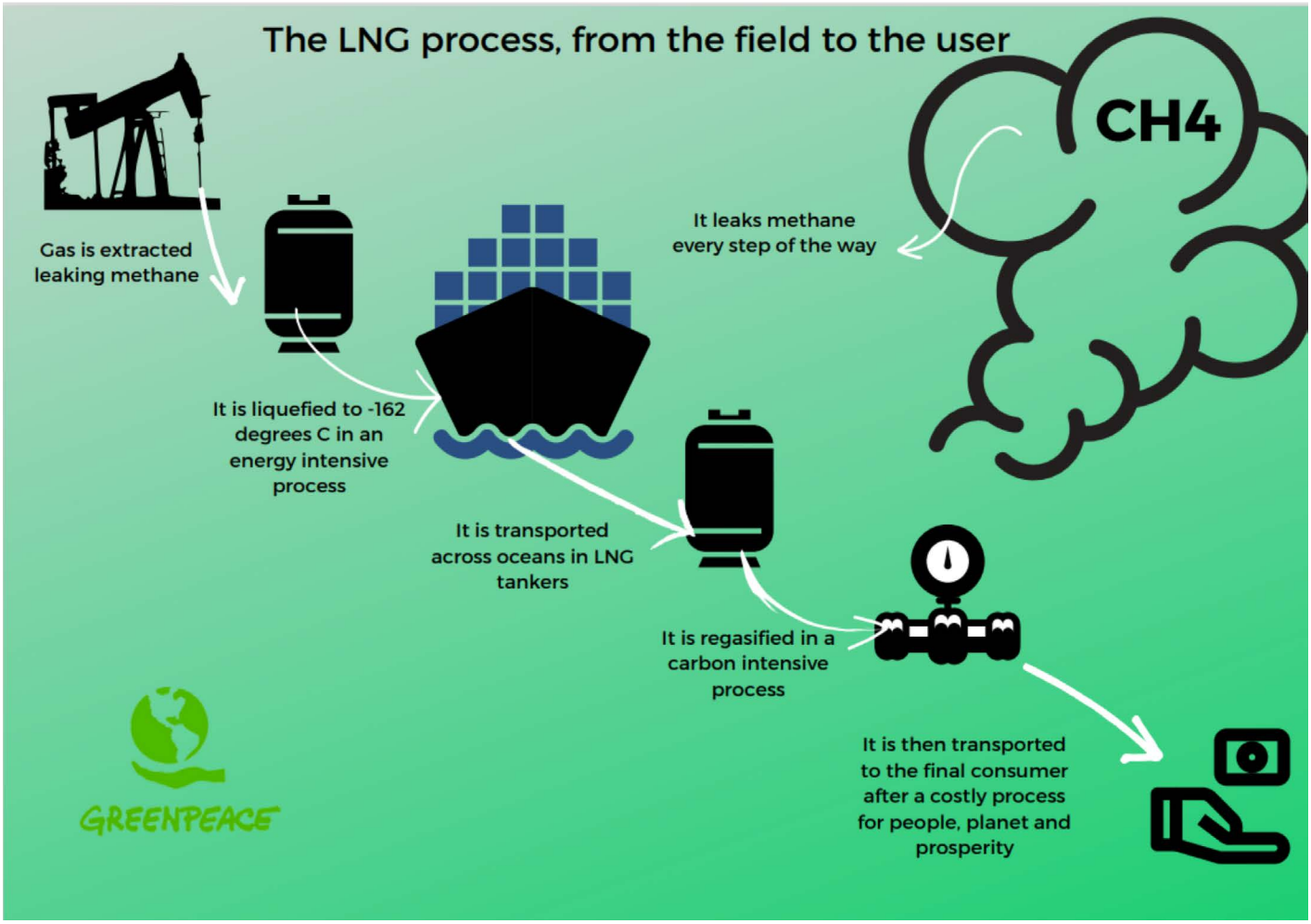
Cheniere - Corpus Christi LNG Facility view 4, San Patricio County, TX (September 2022) - Video courtesy of Earthworks

This video shows the methane leaks from Sabine Pass: https://www.youtube.com/watch?v=qSaMieGUn-U



Cheniere - Sabine Pass LNG View 3, Cameron Parish, lA (June 2022) - Video courtesy of Earthworks

Figure 32: The LNG process, from the field to the user



Source: Greenpeace International

The fundamental argument of gas being a cleaner burning energy source than other fossil fuels fails to take into account the powerful greenhouse effect of leaked fossil gas. When the leakage rate exceeds just 1% of the total gas collected,[364] the maths does not stand anymore and fossil gas becomes as bad as other fossil fuels. With a 3% leakage rate it becomes as damaging to the climate as coal-fired power plants.[365]

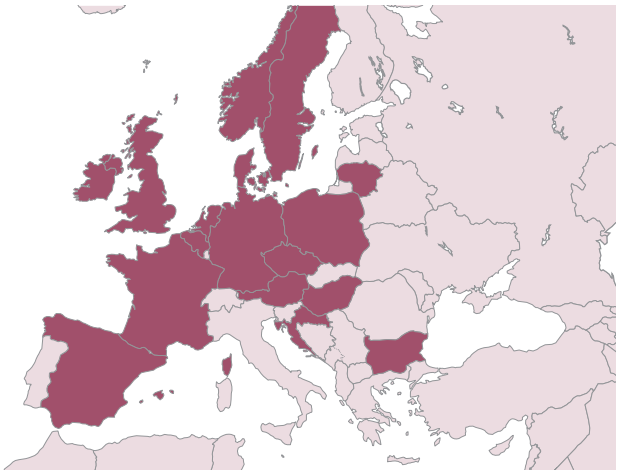
Methane emissions from oil and gas production vary widely by location, operator, and over time. Nationally, US methane emissions have been estimated at about 2.3% of gross gas production,[366] while some regions (such as the Permian Basin) are among the most polluting in the world.[367] A recent survey of the New Mexico Permian Basin estimated an alarming 9.4% methane leakage rate, which was 6.5 times larger than the official EPA data for the region.[368] Also, fracking requires huge amounts of water and chemicals, which are injected into geological formations during a violent and extremely polluting extraction process. In Europe, we are familiar with the destructive impacts of fracking: many countries even banned it.

Outsourcing pollution

We know fracking is harmful, we banned it

After the energy shock due to the first Ukraine-Russia conflict in 2014, there was a renewed interest in fracking in Europe. A study by the EU Commission found 13.3 trillion cubic metres of shale gas reserves in Europe, mostly clustered in France and Poland, who account for 60% of all EU shale gas reserves.[369] However, the impact on local communities of shale gas extraction in the US brought to life a political debate across Europe, which led to the banning of fracking across several EU member states. European countries who outlawed fracking, temporarily or permanently, because of environmental and geological concerns, include France[370] (2011), Denmark[371], Bulgaria[372] and the Czech Republic[373] (2012), the Flemish Region of Belgium[374] (2014), the Netherlands[375] (2015), Germany[376] and Ireland[377] (2017), the UK[378] (2019), and Sweden[379] (2022, banning fossil fuel extraction altogether). Others, like Norway[380], deemed it to be uneconomical, while in Poland,[381] where extensive exploration was done, gas companies gave up due to unsatisfactory drilling findings. Together, these countries make up 88% of estimated available shale gas reserves in Europe.[382] On the map below, the red countries in Europe represent countries that either banned fracking, have a temporary moratorium, or have abandoned fracking plans due to economic unviability.

Figure 33: Status of legality of fracking in Europe



Source: Greenpeace International, and DW Research

Even though these countries are rich in shale gas, the cost of extraction to people and nature is deemed too steep. As a result, the EU is far from becoming a gas extracting power house.[383] This juxtaposition of opposing the extraction of shale gas in Europe but increasing US shale imports is remarkable, with France, the UK, and the Netherlands among the largest importers of US LNG. With its impact externalised beyond EU borders, EU leaders do not hesitate to import fracked gas on a massive scale. This hypocrisy is pointed out to us by Frida Kieninger, director of EU Affairs for Food & Water Action Europe:

"*Dirty, fracked US gas runs in ever-increasing amounts in Europe's pipes and towards industries, homes and other users. A majority of US LNG importing countries in Europe have bans or moratoria on fracking on their territory, but they seem to have no issues whatsoever with opening the floodgates for fracking gas imports. This is a clear hypocrisy and flies in the face of communities in the US that suffer from health impacts, air and water pollution, noise and earthquakes which fracking causes on the other side of the Atlantic.*"[384]

Also John Beard, who we interviewed on March 24th about his fights in Port Arthur (see our chapter "Suffocating communities"), highlights this contradiction:

"*European countries have outlawed fracking because they saw the effects of it and the effects largely were earthquakes, polluted and contaminated underground water sources, aquifers and springs. All of these were adversely affecting what people need. You need water more than you need oil because you certainly can't drink oil. But you definitely need fresh clean water to live. That's essential. They stopped it over there, but they still want our gas and to get them that gas we've got to frack. Because of the way the industry operates. They're not required to police or take care of their business where they should. And a lot of that methane that they're trying to get out of the ground is released directly into the air. It either leaks off or it's burned off by flaring.*

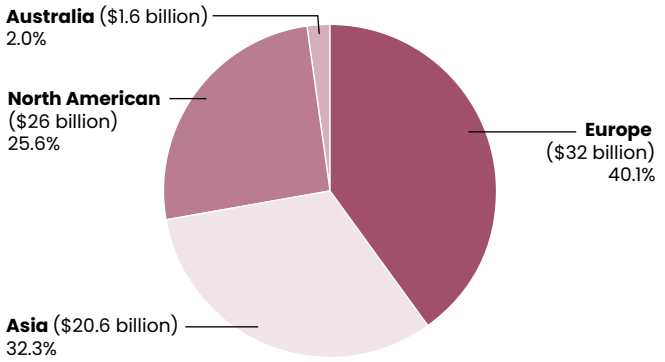
I think it's very short-sighted for Europe to feel comfortable using our gas while we take on the additional burden of fracking and while this also adversely affects our climate. Europe has to up their game also. They have to have a better understanding that their need for our gas

is going to hurt both of us. What happens here is going to eventually happen to you. The fracking that's happening here to give you that gas is going to contribute to climate change and global warming and sea level rise and the extremes of weather and all that come with it. Is that a price that Europe wants to pay for? We have to challenge them. We have to tell them that what you're doing to help you now is hurting us."[385]

Our banks are still investing in fracking

The Cheniere terminals, Sabine Pass and Corpus Christi LNG, are by far the biggest providers of US gas to Europe, including to France, the European entry-point of shale gas, landing in its vast majority in Dunkirk.[386] This is an interdependence: reportedly 70% of Cheniere's exports went to Europe in 2022.[387] Both Cheniere's terminals have been granted loans from financial institutions across the world. According to data gathered by Sierra Club in their LNG tracker,[388] Cheniere has been able to attract more than $80 billion in financing in the form of loans, underwriting of bonds, and loan guarantees.[389]

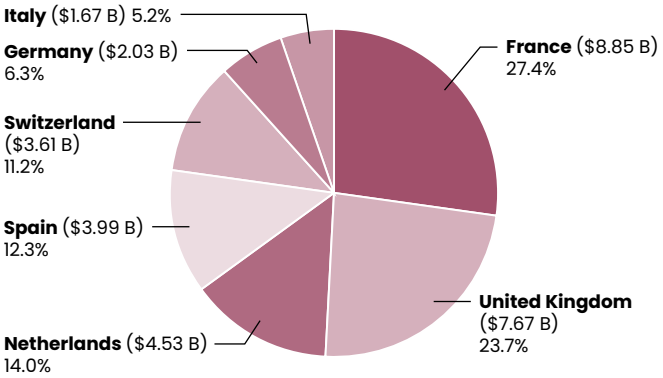
Figure 34: Financiers of Sabine Pass and Corpus Christi LNG terminals divided by region



Source: Greenpeace International based on data from the Sierra Club LNG tracker

According to the data from the Sierra Club, of the 67 banks involved in these LNG terminals, 22 are European, accounting for 40% of the total financing with $32 billion in loans and underwriting spread across seven European countries. This puts Europe ahead of North America in terms of financial support to these export terminals in the US. The earliest loans found are from 2012, at the start of these projects, but the majority of the finance was allocated between 2019 and 2022 when the terminals were expanded.[390] It is worth noting that the current cost of these two projects is projected to be $47.7 billion according to S&P Global, as opposed to the original estimation of $31 billion.[391]

Figure 35: European financiers of Sabine Pass and Corpus Christi LNG terminals divided by country



Source: Greenpeace International based on data from the Sierra Club LNG tracker

This group of countries also includes those who have imported the most US LNG recently, with France and the UK at the top, and Spain and the Netherlands not far behind (see our chapter "Europe becoming the first customer for US LNG"). Also, the same countries who banned fracking in their own territories, are investing heavily to enable the expansion of US fracked gas exports as LNG. French banks, with their strict rules on fracking and investing into unconventional oil and gas,[392] stick out especially, with $8.85 billion in loans and underwriting, according to the Sierra Club. The five French banks involved in Sabine Pass and Corpus Christi account for 11% of the total financing of these projects, which ranks France third, right behind the USA and Japan.

Table 6: French financiers of Sabine Pass and Corpus Christi, loans and underwriting of bonds

Financial institution	Country	Total (in $ mil)
Société Générale	France	4,775.72
Credit Agricole	France	2,251.93
Natixis	France	711.20
BNP Paribas	France	636.02
Crédit Mutuel	France	476.87

Source: Greenpeace International based on data extracted from the Sierra Club LNG Tracker[393]

Interestingly enough, the financial institutions involved in these terminals seem to acknowledge the detrimental impact of fracking, with many banks already excluding these types of investments in one way or another. According to the Oil and Gas Policy Tracker from the French NGO, Reclaim Finance, 18 banks financing these two terminals have at least some policy excluding fracking from their banking activities.[394] They either exclude its extraction in project finance, exclude companies with substantial fracking activities in their investment policies, or choose to exclude particularly harmful projects. According to the data we extracted from the Sierra Club LNG tracker, these 18 banks account for 32% of the total financing to Corpus Christi and Sabine Pass, and all of these banks, apart from the National Australia Bank, are European. These account for 80% of the European financiers, with only Credit Suisse and Standard Chartered having no investment policy around fracking at this moment.

However, the financing data found for these LNG terminals showcases the gaps left in the policies around unconventional oil and gas of these financial institutions. Because while almost all European banks listed below have some sort of policy on fracking, Reclaim Finance evaluated all these policies as 'weak' or 'very weak'. They argue[395] that far too often, these policies are too flawed, leaving banks with ample opportunities[396] to invest in the fracking boom. This is evidenced in the fact that banks might have policies excluding the extraction of fracked gas, but show no restraints in financing the LNG terminals built especially for the export of this highly impactful gas such as Corpus Christi and Sabine Pass LNG terminals (see our box "Cheniere's dirty business").

Table 7: Top 10 European financiers of Sabine Pass and Corpus Christi, loans and underwriting of bonds

Top 10 European Financiers	Country	Value ($ mil)
Société Générale	France	4,775.72
Credit Suisse	Switzerland	3,617.49
HSBC	UK	3,256.06
ING	Netherlands	3,024.56
Crédit Agricole	France	2,251.93
Standard Chartered Bank	UK	2,144.03
Lloyds Banking Group	UK	1,916.19
BBVA	Spain	1,804.20
Intesa Sanpaolo	Italy	1,667.45
ABN AMRO	Netherlands	1,502.37
Santander	Spain	1,472.84

Source: Greenpeace International based on data extracted from the Sierra Club LNG Tracker

Activists in France and the US win battle against French banking giant.

Société Générale, the largest financier for Sabine Pass and Corpus Christi LNG terminals, recently announced its withdrawal from the controversial Rio Grande LNG shale gas export project in South Texas[397].

"After years of mobilization by activists and communities on both sides of the Atlantic, this announcement is a victory for civil society and a defeat for Rio Grande LNG. It comes at a time when far too many governments and companies in Europe are rushing into US LNG, locking us into dependencies that are already costing the climate and citizens far too much." Says Lorette Phillippot of Friends of Earth France.

The French bank had been the target of a coalition of US and French organisations since 2017, when it was engaged as a financial advisor by the project sponsor, NextDecade. These organisations welcome Société Générale's decision and urge other financial institutions to avoid the LNG project altogether.

Messing with emissions

As set out above, European companies signing contracts with US export terminal owners like Cheniere, play a significant role in the FIDs leading to the expansion of these terminals or the construction of new terminal projects. They are thus encouraging the development of the fracking industry in the US. This is being pointed out by NGOs in Europe, denouncing the hypocrisy of European countries banning fracking from their soil and nevertheless allowing their companies to sign mega contracts pushing for more fracking in the US. European companies, under public scrutiny, try to mitigate this reputational risk by getting non-rigorous green labels on their US contracts - greenwashing their business abroad - or by negotiating them under the radar, away from public attention. Engie reportedly adopted both tactics in its recent US deals.[398]

The French company reportedly had been negotiating a €5.9 billion deal with NextDecade for two years before finally closing it in 2022.[399] Engie had been forced to put it on ice in November 2020,[400] after facing massive criticism from the French State - holding 23.6% of Engie's shares[401] - and the environmental movement, raising climate concerns linked to methane leaks in the Permian basin and the fracking process the negotiated gas would require. A recent report exposes what happened behind the scenes for the deal to still be closed: NextDecade started negotiations with Engie, guaranteeing the French company it could provide it with a certificate stating NextDecade's gas was low-carbon gas.[402] In order to do so, the American company would go through a newly founded third company, Project Canary, which would carry out an "independent" assessment of the life-cycle emissions of NextDecade's gas.[403]

An investigation by Earthworks and Oil Change International raises serious questions about Project Canary's methodology.[404] Earthworks used Optical Gas Imaging (OGI) cameras to survey oil and gas sites that were also monitored using Project Canary's technology (Continuous Emissions Monitors, or CEMs). They found CEMs *failed to capture every significant pollution event* that was detected with the OGI cameras, and spoke with experts who were sceptical of claims made about gas certification.[405] The report also raised concerns around a lack of transparency, conflicts of interest, and noted misleading claims in their marketing that amount to greenwashing. Other reports have noted that Project Canary allows its clients to select which wells and facilities are subjected to monitoring and certification, a practice which could lead to the best sites being cherry-picked.[406]

However, Engie went along with this offer. Ken Robinson, the head of Engie's US energy marketing business, reportedly declared this certification made the contract more "palatable" to its opponents in France.[407]

Meanwhile, in the midst of the NextDecade contract turmoil, in June 2021, Engie signed a 11-year deal with Cheniere Energy, which was extended to a 20-year deal right after the start of the Ukraine war.[408] The initial deal was reportedly closed without warning the Board of Engie and thus the French State,[409] which was reportedly confirmed by the French government,[410], its biggest shareholder. In a reaction to *Le Monde*, reporting on this negotiation, Engie reportedly states "this contract represents 2% of the projected volumes served by Engie at the horizon of 2030. The usual internal rules of the group regarding the approval of a contract of that size, limited, have of course been followed."[411]

The Internal Regulations of the Engie Board of Directors stipulate:
"*The Chief Executive Officer shall obtain prior authorisation from the Board to carry out the following transactions:*

- *enter into any long-term power purchase agreements on behalf of the Group for quantities exceeding the following per transaction;*
  - *30 billion kWh of gas per year, including the conditions of transport.*"[412]

The initial contract between Engie and Cheniere was for a volume varying between 0.4 million tons (5.4 billion kWh) and 0.9 million tons (12 billion kWh) from 2023 to 2032.[413] These amounts did not have to pass by the Board of Directors. The press release announcing increased volumes is not clear as the volumes mentioned there are the same as the ones in the 2021 contract. [414] Bloomberg estimates there is a possibility it was raised to 1.2 million tons a year (16 billion kWh).[415] The contract was also prolonged by nine years and now runs until 2041.[416]

French NGO Les Amis de la Terre accessed confidential documents leading up to the signature of the initial

contract. They shared those (unpublished) documents with us. In the Investment Note submitted to the Development Committee, it appears Engie was worried about the negotiations with Cheniere, which started in the last quarter of 2020. The project gets a code name: Mustang, a nickname given to Cheniere. In the note, Engie recommends: "*no publicity should be made around the transaction to keep it under the radar*." The company says they have to be "*always taking into account the lessons learned from BU LNG and the NextDecade process*."[417]

According to the confidential documents, Engie identifies multiple risks in its collaboration with Cheniere. First it stresses this is about shale gas, which caused trouble in the public opinion when the NextDecade contract was made public. On the other side of the Atlantic though, Engie reassures: there seems to be "*no major local controversy found against Mustang apart from Sierra Club and opponents to pure export of LNG.*" Engie is also worried about the way Cheniere handles its reduction of GHG emissions along the supply chain: "*it only relies on the supplier's commitment to reduce their emissions (through participation to voluntary initiatives like ONE Future) and on the requirements set by the local regulation for GHG reporting.*" According to the documents, the American company has "*no upstream commitments*," while at the same time it "*sources from approx 70 producers in various states*." Also, Cheniere "*reports no dedicated water management system, nor performance target*." On the GHG reporting, Engie sees a mitigation factor in the fact that Cheniere "*announced in February 2021 the significant commitment to provide GHG performance certificates from wellhead to liquefaction for 100% of its LNG production from 2022 onwards*." In *Le Monde*, reporting about this negotiation, Engie reportedly comments: Cheniere "*is committed to a major effort of transparency, traceability of the carbon content of its gas chain and continuous improvement in the management of methane and carbon dioxide emissions.*"[418]

In the above mentioned investigation,[419] however, it appears Engie was aware this was not sufficient, as the low-carbon certificates would be issued by Cheniere itself, a conflict of interests which Engie made a point to escape from in its public deal with NextDecade.[420] Indeed, Cheniere's "green tags" are everything but green (see our box "Cheniere's dirty business"). Nevertheless, Engie and Cheniere continued their negotiations to settle down to Cheniere's conditions in June 2021.[421]

Cheniere's dirty business

The surge in demand for fossil gas – coupled with a public increasingly supportive of climate goals – has initiated intense greenwashing. There is a rush among companies to present ***their*** gas as "greener" and more climate-friendly than the alternatives. These "green LNG" schemes often rely on carbon offsets and, in some cases, proposed Carbon Capture and Storage (CCS) projects, but one key factor has been dealing with the problem of methane emissions in the supply chain.[422]

In June 2022, Cheniere Energy – the largest LNG exporter in the US – started supplying "cargo emissions tags" (CETs or CE Tags) to its customers purporting to quantify lifecycle emissions of its LNG shipments.[423] However, an investigation by Greenpeace USA and Oil Change International found that these tags were based on a flawed methodology.[424]

Key findings of this investigation include:

- The published methodology paper[425] builds on flawed EPA data on the methane emissions of its upstream suppliers. Studies have found that EPA data substantially underestimates methane emissions by relying on outdated emissions factors that do not accurately capture emissions from large "super-emitter" events.

- A sensitivity analysis found in the paper's supplemental information shows that when more accurate emissions factors that better incorporate high-emissions events are used, the full lifecycle emissions increase significantly. This finding was not incorporated into the paper's result and conclusions.
- Despite claims that the methodology is "supplier-specific," only 58% of the gas supply assessed in the paper is sourced from known suppliers, while 42% comes from marketed gas for which no supplier-specific data exists. The authors note that the complexity of the gas network and the lack of data make it "difficult" (even for industry insiders) to track the "exact pathway" gas travels from wellhead to terminal. As a result, it seems unlikely the current iteration of the CETs will be able to provide granular enough information to associate a given LNG shipment with a specific subset of upstream suppliers.
- The paper only analyses the company's Sabine Pass LNG plant and does not provide any information about the supply chain for its Corpus Christi LNG plant.[426] On an earnings call in November 2021, CEO Jack Fusco reportedly told analysts, "about 100% of the gas at Corpus Christi right now is coming out of the Permian Basin,"[427] which has earned a reputation for having one of the highest methane venting and leakage rates in America.[428] As a result, the discrepancy with EPA data could be even more pronounced with Corpus Christi than with Sabine Pass, and the total lifecycle emissions for Corpus Christi cargoes could be very large.
- Cheniere's CETs may have incomplete or limited data on super-emitter events in their supply chain. As one example, in 2019 Apache Corporation signed a 15-year contract to supply gas to the Corpus Christi Stage III expansion.[429] (In 2021, Apache was reorganised as a subsidiary of APA Corp.) On December 24, 2022, a large methane plume was observed (by satellite) coming from an APA facility in the New Mexico Permian. Reportedly, either the state regulator nor the company itself was aware of the leak until contacted by a Bloomberg reporter.[430] The plume reportedly had an emissions rate of 5 metric tons of methane per hour, and was later found to be caused by a faulty flare. While it is unknown whether APA is a current supplier to Corpus Christi (as the Stage III expansion has not yet started commercial operation), this example is indicative of some of the significant unknowns lurking behind Cheniere's CETs.[431]

In the May 2022 edition of LNG Industry Magazine, Cheniere's Senior Vice President for Corporate Development and Strategy Tim Wyatt stated that, "CE Tags will be a necessary prerequisite to credible carbon offsetting."[432] This clearly indicates that customers who receive CETs with their LNG cargo may use the emissions estimate to buy carbon credits to offset the emissions associated with the cargo. But the $1 billion unregulated carbon offset market has been widely discredited by experts, academics, banks, and regulators for failing to reduce carbon emissions.[433] The potential role of Cheniere's CETs in bolstering a discredited and destructive carbon offset market threatens to undermine company efforts to reduce emissions in its operations by creating a veil of carbon neutrality around a product that is anything but.[434]

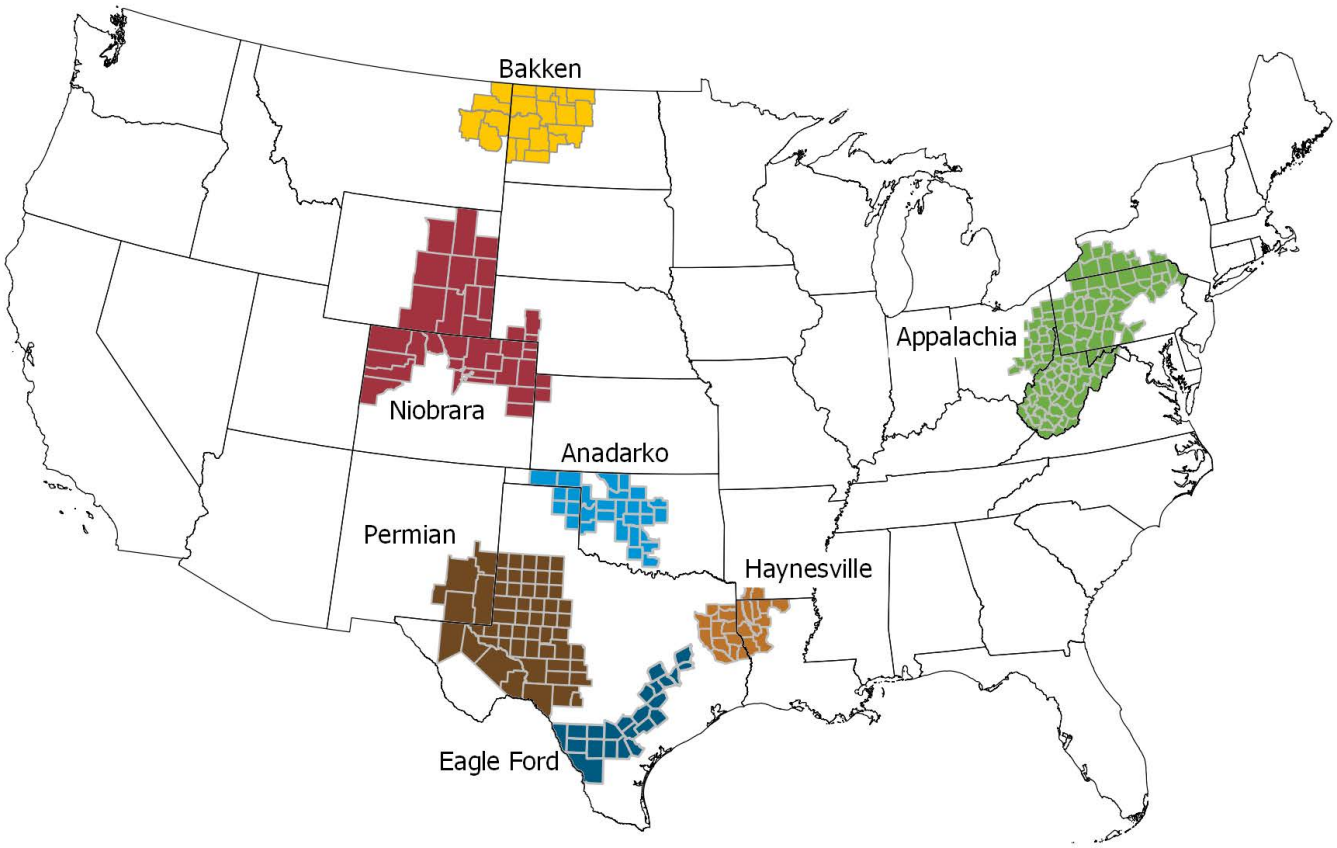
Suffocating communities

Oil and gas are produced in a number of different regions across the US Midwest. The Permian Basin in Texas and New Mexico is the largest oil producing region in the US, but the largest gas producing region is the Appalachian Basin (in Pennsylvania, Ohio and West Virginia), with significant producing areas also in North Dakota, Colorado, Oklahoma, Louisiana and elsewhere.[435] A vast network of pipelines transports much of this oil and gas south to the Gulf Coast for processing and (increasingly) export.

Each stage of the life cycles of oil and gas — extraction, processing, transport, and combustion — generates toxic air and water pollution, as well as GHG emissions that drive the global climate crisis. Exposure to this pollution is linked to negative health impacts for people living near these pollution sources. The impacts of climate change are also strongly linked with rising health risks. In the context of the United States, it is well-established that the public health hazards from air and water pollution, and the risks associated with climate change, fall disproportionately on Black, Brown, Indigenous, and poor communities.[437]

The Gulf Coast – especially Texas and Louisiana – is home to a great concentration of oil refineries, petrochemical facilities, and crude oil and LNG export terminals. Certain parts of the region are among the most polluted in the nation – notably the "Cancer Alley" region (on the Mississippi River between New Orleans and Baton Rouge) and the Houston Shipping Channel.[438] Communities like these that have been significantly harmed by pollution are often called "sacrifice zones".[439] The build-out of LNG export infrastructure adds new burdens on top of existing pollution for many of the communities where these projects are located. This is due to pollution from the terminals themselves, but also the increase in oil and gas drilling, and the expanded pipeline network built to facilitate these exports.

Figure 36: Map of the most significant oil and gas producing regions in the US



Source: EIA[436]

In addition to high GHG emissions, LNG export terminals are significant sources of air and water pollution that are associated with local health risks. Pollutants include both criteria air pollution, such as fine particulate matter (PM2.5) and nitrogen oxides (NOx), and air toxics, including volatile organic compounds (VOCs) and carcinogens such as benzene.[440] A 2020 report by the Environmental Integrity Project found that proposed and existing terminals, and their associated pipelines and compressor stations, would lead to thousands of tons of increased air pollutant emissions.[441] Flaring of excess gas is common at many terminals and is a source of much of this pollution.[442]

This local pollution can result from routine operations,[443] and can greatly increase in the event of breakdowns, failures, explosions or other catastrophic events. In June 2022, the Freeport LNG terminal suffered a serious explosion that was later found to be due to "inadequate operating and testing procedures, human error and fatigue."[444] No one was killed or injured in the blast, but the plant reportedly had previously had a record of safety issues, and such LNG explosions are potentially very destructive events with risks for nearby communities.[445] Hurricanes impacting the Gulf Coast also raise the risk of flooding at terminal sites[446] and the need to flare off excess gas in the event of emergency shutdowns.[447]

Cheniere's Corpus Christi terminal was found to have exceeded its air pollution permit limits "hundreds of times," which the state regulator reportedly addressed by weakening those limits and allowing double the initial permitted emissions of VOCs.[448] Cheniere even reportedly petitioned the Biden administration to exempt it from rules limiting emissions of cancer-causing pollutants, claiming the rules could limit LNG shipments to Europe.[449]

As with all other stages of fossil fuel lifecycles, the pollution harms from LNG terminals are not shared equally. Analysis by the Sierra Club concluded the "majority of the planned and under construction terminals are in communities that have higher air toxics cancer risk, higher air toxics respiratory hazard index, and higher minority populations and/or low income populations than 75% of the country."[450]

All the operating and under-construction terminals except one in the US are located near a "disadvantaged community" as determined by the Sierra Club.[451] Notably, the Corpus Christi and Freeport terminals have a large population living within three miles of the site, that are disproportionately low-income and people of colour.[452] A cluster of three terminals (Sabine Pass, Golden Pass, and Port Arthur LNG) is located near Port Arthur, Texas – a town of 50,000 (majority people of colour) that is already home to three oil refineries, including the largest in the US. Other terminals have been proposed in regions that are disproportionately low-income communities of colour – notably Rio Grande LNG, Texas LNG, and Plaquemines LNG.[453]

In addition to pollution harms from LNG terminals themselves, the surge of LNG exports has sparked an increase in oil and gas extraction, transport and processing to meet the demand. A compendium of scientific and medical research on the impacts of fracking in the US summarised its findings by saying, "Our examination uncovered no evidence that fracking can be practised in a manner that does not threaten human health directly and without imperilling climate stability upon which public health depends."[454] A growing body of research has associated proximity to oil and gas activity with health problems[455] such as respiratory impacts (e.g. asthma),[456] cancer,[457] poor birth outcomes,[458] and more. Data from the EPA's Air Toxics Screening Assessment shows that 236 counties with a total population of 14 million "face cancer risk exceeding EPA's one-in-a-million threshold level of concern, just due to oil and gas pollution."[459]

In all of this, poor communities and communities of colour repeatedly suffer the most. In south Texas, there is evidence that fracking wastewater disposal wells are disproportionately located in Black, Brown, Indigenous, and poor communities.[460] Similarly, south Texas oil and gas flaring is found to disproportionately occur in Hispanic communities,[461] and the risk of birth complications has been found to be higher among Hispanic women.[462] In the Permian and Eagle Ford basins in Texas, a majority of the population living near gas flares are people of colour.[463]

It's not over

The lock-ins and the associated LNG boom we witnessed in 2022 are set to further increase in 2023. The latest monthly Short-Term Energy Outlook from the US Energy Information Administration (EIA) forecasts that US LNG exports will keep growing in 2023 and in 2024, to average 12.1 billion cubic feet per day (Bcf/d) in 2023, a 14% (1.5 Bcf/d) increase compared with 2022,[464] and increase by an additional 5% (0.7 Bcf/d) in 2024. The main reasons for this pursued surge are the return to service of the Freeport LNG export terminal and the continued "need to displace pipeline natural gas exports from Russia to Europe."

This increase of LNG flooding Europe is backed by policy measures and industry lobbying advocating for additional lock-ins in the coming years. On 14th February 2023, executives from US and European LNG companies reportedly met with European Commission officials in Washington to discuss the EU's plans to form a buying consortium to help member countries meet their gas needs.[465] Maroš Šefčovič, one of the Commission's Vice-Presidents, declared the plan is for European countries to "use their combined purchasing power to buy at least 15 percent of the region's natural gas inventory needs."[466] This would "prevent the EU members from bidding against each other and driving up the price of natural gas, which skyrocketed last year as European companies scrambled to replace their gas supply after Russia invaded Ukraine."[467]

On 15th February, Greece's DESFA (co-owned by Fluxys through the Senfluga consortium, cfr. supra) launched the public consultation on its Ten-Year Development Plan (TYDP) 2023-2032.[468] DESFA's new TYDP includes projects with a total budget of €1.27 billion, a significant increase (+55%) compared to the corresponding previous investment plan. Its purpose is to "consolidate the country as a natural gas supply gateway for Southeast and Central Europe."[469] The TYDP includes new projects amounting to €458 million, of which €430 million concern investments to increase the capacity of the Greek gas network, such as a €290 million and 215 kilometre new pipeline. It also comes with a 100 kilometre pipeline to connect to the Dioriga FSRU awaiting its FID.[470]

This increase of LNG flooding Europe is backed by policy measures and industry lobbying advocating for additional lock-ins in the coming years.

This was saluted six days later by US Secretary of State Antony J. Blinken, who published a Joint Statement on the fourth US-Greece Strategic Dialogue, together with the Greek Minister of Foreign Affairs Nikos Dendias.[471] The US underscored Greece's role in securing Europe "particularly in the wake of Russia's war against Ukraine." This on the military front (together with US and NATO support) as well as on the energy front, with connections to Azerbaijan and the US who are both "contributing to Europe's peace, stability and independence."[472]

On 16th February, US senators[473] introduced a bill to increase US LNG exports.[474] The Natural Gas Export Expansion Act aims at "remov(ing) federal regulatory bottlenecks to increase LNG exports," as stated in Senator Kennedy's press release. To those senators, "LNG exports (...) promote America's energy independence and reduce global emissions." "We should make it easier — not harder — to export American LNG, and that's what this bill would do," said Kennedy. Here as well, the dependence on Russian gas is used as a scarecrow to promote American "freedom" and "clean" gas in solidarity with European consumers: "Thanks to the United States' innovation and use of clean natural gas, America leads the world in reducing carbon emissions. By exporting US LNG, the United States creates thousands of jobs at home, reduces global emissions, and promotes energy independence from those who use it as a weapon to exert control over importing countries," declared Senator Cruz in the same press release. They conclude: "This legislation would bolster America's energy independence at home and supply our allies abroad, especially our European allies, who are acutely affected by strains on reliable fuel supply because Russia invaded Ukraine. Increasing LNG exports would broaden access to clean, affordable energy with American trading partners and counter

the Biden administration's full-frontal assault on the US fossil fuel industry in the process."

On 23rd February, Cheniere announced its intention to expand Sabine Pass LNG in order to add 20 mtpa of gas export capacity, up 66 per cent from the facility's current capacity of 30 mtpa.[475] The company is betting on the 2022 LNG boom to Europe to last for decades, as outlined by Anatol Feygin, Cheniere's Chief commercial officer: "The need for further investment in LNG capacity was again laid bare last year. Over the next few decades, both the supply and demand side trends are supportive of new liquefaction infrastructure."[476] Indeed, this is a very long-term project, as the new facilities in Sabine Pass would reportedly start operation only by the end of the decade.[477] Such an injection of money (estimated by the Financial Times at $10 billion[478]) shows the company is confident the return on investment will spread over decades. The Financial Times also reports Feygin acknowledged Cheniere is already looking to European and Asian buyers to secure its project.[479]

On 27th February, the EU adopted Regulation (EU) 2023/435,[480] reforming the Recovery and Resilience Facility (RRF) regulation, the financial leg of its €750 billion post-Covid fund. Out of this fund, €67.5 billion would be allowed to finance urgent projects related to the energy crisis, among which Investigate Europe identified at least 41 LNG terminal or gas pipeline developments.[481]

On 28th February, ahead of the annual CERAWeek,[482] gas lobby groups sent a letter to the US Secretary of Energy, addressing the upcoming G7 (Hiroshima, 19-21 May 2023) which should prioritise "ending dependence on Russian natural gas" and "stabilising global energy markets" by "encourage(ing) public and private investment in all segments of the natural gas supply chain," "review(ing) and modify(ing), as appropriate, existing guidelines and practices with respect to public financing of natural gas infrastructure" and "review(ing) and modify(ing), as appropriate, existing regulatory regimes and practices to facilitate timely approval of requests to develop and operate natural gas infrastructure."[483]

On 8th March 2023, at the CERAWeek, Didier Holleaux, president of Eurogas (co-signer of the letter to the US Secretary of Energy) and Executive Vice-President of the Engie group, reportedly made it clear that European companies needed to sign more long-term contracts to "secure a significant share of the replacement gas we need to replace Russian gas."[484]

On 13th March, Plaquemines LNG announced it reached its FID for phase 2.[485]

On 17th March, European Commission President Ursula von der Leyen announced Norway's Equinor would join the EU's joint scheme for gas procurement as a supplier. Together with this declaration, she clarified that, "in a bid to improve security of energy supply" the common goal of the EU was to "have more long-term contracts."[486]

On 20th March, Port Arthur LNG announced it reached its FID for phase 1.[487]

On both sides of the Atlantic, however, communities and civil society are fighting these accelerated fossil expansion projects, and regulators are developing tools which might put a spoke in the wheel of these inconsiderate plans.

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Due diligence – holding them accountable

The passage of the Inflation Reduction Act (IRA) in August 2022 marks a turning point in US Climate Policy. For the first time, the US Congress has acted to curb demand for fossil fuels, though has largely left fossil fuel supply unconstrained. As a candidate for president, Joe Biden promised to ban "new oil and gas permitting on public lands and waters" and end fossil fuel subsidies.[488] Biden also pledged to "engage in community-driven approaches to develop solutions for environmental injustices affecting communities of colour, low-income, and indigenous communities."

While the IRA is an historic achievement, Biden's early moves to halt federal leasing were stymied by the courts[489] and Congress.[490] With his recent approval of the massive Willow oil-drilling project in Alaska,[491] Biden seems to be breaking his campaign promise to end federal permitting. His administration has also given the green light to oil and gas export projects, and has lent its diplomatic and policy support to the surge of LNG shipments to Europe.[492]

As a result, the US continues as the global leader in oil and gas production, yet finds itself in the trap described in a 2019 report by Greenpeace USA on the need for a fossil fuel phase-out.[493] Namely, policies to reduce domestic demand coupled with high production resulting in a surge of exports.[494] These exports not only represent "emissions leakage" but, more importantly, a growing threat to the health of communities all along the oil and gas supply chain.

Both President Biden and Congress must take further steps to ramp down fossil fuel production, which would bring immediate benefits to fenceline communities and plug the emissions leakage problem.

Local communities living near these existing, under construction, and proposed LNG terminals have organised campaigns of resistance to the build-out.[495] Concerns about local pollution, environmental racism, and climate breakdown have sparked opposition in Corpus Christi,[496] NextDecade in Brownsville,[497] and the glut of projects near Lake Charles and Port Arthur.[498]

"I don't think the system works or is even designed to work for the people that are affected the most. If it were, then we wouldn't have sacrifice zones."
— John Beard

We interviewed John Beard, the founder, president and executive director of the Port Arthur Community Action Network ("PA-CAN")[499], serving the Port Arthur/Southeast Texas area as a community advocate, focusing on environmental issues and community development (*online video and addendum 2 to the report with full transcript*). He is fighting the petrochemical and fossil fuel expansion plans his community is facing in Port Arthur, as it is home to the biggest export terminal in the US (Sabine Pass LNG), a terminal under construction (Golden Pass LNG), and the Port Arthur LNG project, all in a 10km radius. We interviewed him on 24th March 2023, the week the Port Arthur LNG project reached its FID.

He stresses the difficulty for people in his community to gather the information they need to fight the projects that are imposed on them:

"*For people who are not trained in permitting processes, it can be very daunting to overcome these processes. Most of the time you have the public comment period, or you have the opportunity to request a public hearing. But rather than [the public] having to request these hearings, these federal and state agencies need to seek out to engage and work with the communities where these projects are. I think that would serve the greater good a lot better than simply having the companies do their thing. Our communities are left to figure out how to get involved in these processes. Where do they fit in? How do they say what they think? We don't want that pipeline. We don't want that LNG facility. Or we don't want this next door to our houses. How do we have a role in this, and be heard and be effective? I don't think the system works or is even designed to work for the people that are affected the most. If it were, then we wouldn't have sacrifice zones.*"

"For the EU to reach its climate and sustainability goals and to ensure the protection of human rights, it is important that companies identify and prevent, bring to an end or mitigate the impact of their activities on human rights and the environment."
— Jozef Síkela, Czech Minister for Industry and Trade.

To John Beard, the industry is taking advantage of the difficulty for these communities to access information and contest expansion plans that will hijack their lands:

"If the system was working well, LNG facilities and other petrochemical plants wouldn't just be here in Port Arthur or in Lake Charles or in Freeport. They'd be in places like Beverly Hills. They'd be in places like Madison Avenue. They'd be in places like in Houston, in River Oaks or in other places of affluence and wealth because those people have the means to fight back. They can hire lawyers. They have the tools to be able to address these things when it happens. That's why you notice none of these projects happen in areas like that. They happen basically where there are poor people because as one of the heads of industry I heard once said, "that's the path of least resistance: that is where people have the least ability to fight back." But these processes need to be, as we say, "of, for and by the people," [meaning] who it may affect. It's not just about the company. The company's goal is only to make money and seek the best return for its stock and shareholders. But this should not happen at the risk and the forsaking of the lives and the health of the people who are going to be impacted by these projects. If people don't want it, [then] it shouldn't go there. If that area has been adversely impacted, like my hometown has been for over 12 decades, then it shouldn't go there. No project should do harm. If it adds to, or contributes to, or does harm or creates a threat that is deemed locally to be too great a risk, then it should go elsewhere.

We need to have a say in this. And not just a say to be heard, but a say to be listened to too. And if we don't want it, it shouldn't be forced on us. Our representatives should remember they are elected by the people and they have to serve them. We shouldn't be sacrificed on the altar of big oil and gas profits. We are not going to sacrifice our health for their profits." "We've been sacrificed so Europe and the rest of the world can have that very toxic gas."

In Europe, legal initiatives are being taken to put an end to these toxic effects of the fossil fuel industry (and other polluting industries). Debates around the due diligence of European companies arise in many member states as well as at overarching levels in the EU.

In February 2022, the European Commission proposed a directive on corporate sustainability due diligence.[500] The aim of this directive was to implement "*comprehensive mitigation processes for adverse human rights and environmental impacts in their value chains, integrating sustainability into corporate governance and management systems, and framing business decisions in terms of human rights, climate and environmental impact*."

In December 2022, the European Council adopted its negotiating position 'general approach' on this directive.[501] "*For the EU to reach its climate and sustainability goals and to ensure the protection of human rights, it is important that companies identify and prevent, bring to an end or mitigate the impact of their activities on human rights and the environment*," declared Jozef Síkela, the Czech Minister for Industry and Trade. The due diligence directive sets out rules for companies to minimise the adverse impacts on human rights and the environment, with respect to their own operations, those of their subsidiaries, and those carried out by their business partners. These rules would apply to large EU companies (over 1,000 employees and €300 million net turnover globally) and to non-EU companies active in the EU.

In the directive, human rights are referred to as (among others):

"*The prohibition of causing harmful soil change, water or air pollution, harmful emissions or excessive water consumption or other impact on natural resources, such as deforestation, that: (a) substantially impairs the natural bases for the preservation and production of food; (b) denies a person access to safe and clean drinking water; (c) makes it difficult for a person to access sanitary facilities*

or destroys them; (d) harms the health of a person"[502]. The directive should be voted on in plenary session on 8th May 2023.[503] It will then be discussed in a trilogue between the Parliament, the Commission and the Council before possibly being finalised under the Belgian presidency of the Council in the first half of 2024.

At the national level, the two European countries we focussed on in our case-study were France and Belgium. Both, whether through their banks supporting the expansion of the fracking industry in the US, through companies signing contracts decisive in the FIDs of US LNG terminals or through the Dunkirk LNG terminal providing a privileged platform for the US LNG to spread across Europe, also are ahead on the due diligence issues.

France was amongst the first European countries to vote on a due diligence law, back in 2017.[504] Before this, no other law had such a vast binding obligation for parent companies and contracting companies towards their subsidiaries or their value chain (subcontractors, suppliers), in their original country and abroad. This law obliges multinationals operating in France, who have more than 5,000 employees in France or 10,000 employees worldwide, to publish a diligence plan mitigating the risks in terms of violations of human rights (including rights to health) and preservation of the environment.[505] This diligence plan should come with a mapping of risks, procedures to evaluate the situation in the whole value chain, actions to mitigate the risks, an alert mechanism to collect reportings of possible risks, and a follow-up plan for the implemented mitigation measures.

The law targets companies and their whole chain: parent companies, holding companies, subsidiaries, subcontractors and suppliers. It allows victims, NGOs and unions to file complaints against companies breaching the due diligence law. Also victims abroad can file a complaint in front of a French judge for activities of companies targeted by this law. The complaint can be filed before the damage is caused, based on the due diligence plan the companies have to publish. The burden of proof, however, is on the plaintiffs. The law has already led to multiple initiatives, like the EACOP campaign[506] or the BNP campaign.[507]

In Belgium, debates started after the UN Human Rights Council adopted an historical resolution on due diligence in June 2014.[508] After multiple negotiations rounds, the Belgian parliament adopted a resolution in January 2021, asking the federal government to take measures to speed up the process in Belgium, in order to develop a national due diligence law. A first proposal was introduced to Parliament in April 2021.[509] The authors of the proposal stressed the need to move forward with this law regardless of the evolution of discussions at European level on this topic:

"*Waiting for EU action only has the effect of prolonging a situation of unfair competition to the detriment of many Member States. On the contrary, a law would give Belgian companies the necessary impetus to adapt in anticipation of the implementation of an EU regulation, thus allowing them to get a head start in a market where political decision makers, consumers and investors are increasing their expectations of corporate social responsibility.*"[510] The intention of this proposal is thus for Belgium to be a pioneer in the due diligence landscape, following the French law cited as an example to follow.

The proposal explicitly targets "high-risk sectors of economic activity (...) likely to fuel, directly or indirectly, armed conflicts, human rights violations," among which it singles out "sectors of the extractive industries."

Following some remarks from the State Council,[511] a new proposal was introduced, with amendments, in August 2022.[512] If this proposal gets approved, companies will have to draw up a detailed diligence plan, mapping their suppliers and customers, as well as the risks along their business activities, and implementing the same steps as those mentioned in the French due diligence law (art. 8).[513] A surveillance body will make sure companies are complying with the law (art. 12-13), and sanctions could apply if this is not the case (art. 14). Companies active in Belgium could be sued in Belgium for violations in their business chain abroad, with the burden of proof here being on the companies (art. 28).

This is another perfect example of the application of the shock therapy by gas operators, pushing for the continuation of their business model by using the confusion and fear of black-outs generated by the global energy crisis, and pushing for gas as the only possible solution.

The law would apply to companies with headquarters in Belgium, companies active on Belgian soil (providing products to final users living in Belgium or delivering products from Belgium), and - differently from the French law targeting multinationals only - companies with more than 250 employees and a total balance sheet over €43 million (art. 2, 2°-5°). It also would apply to subsidiaries over which a company defined as before has a controlling power (art. 2, 7°), and to associated companies or its subsidiaries in which it has shares (art. 2, 8°). Finally, it targets the whole value chain of a company[514].

Art. 2, 14° of the law proposal outlines that due diligence with regard to the environment has to be understood as the principle of sustainable investment as defined in the EU 2019/2088 regulation on sustainability-related disclosures in the financial services sector,[515] and is assessed based on the requirements for technical screening criteria as defined in the EU 2020/852 regulation on the establishment of a framework to facilitate sustainable investment.[516] A sustainable investment should thus contribute to an environmental objective, measured with indicators like waste generation and management as well as the GHG emissions the activity would generate. It would also need to benefit socially disadvantaged communities or, at least, not harm them. The investment would be assessed based on criteria which would exclude all activities which are not taking into account the full lifecycle impacts of an economic activity and the products resulting from this activity, as well as activities which would lead to lock-ins and stranded assets resulting from a non-alignment with European environmental goals.

Art. 2, 11° lists the international human rights conventions safeguarding the rights to health[517] and of non-racial discrimination.

The law proposal also comes with sanctions in case of breaches: if the company or its subsidiaries cause or contribute to negative consequences on human rights or on the environment, and is not able to stop the toxic effects of its activities, it needs to stop its activities. If one of its business partners is causing this toxic snowball effect, the company has to phase out its business with them.[518]

The parties allowed to file a complaint for breaching the due diligence law are local communities, NGOs, workers, and shareholders.[519]

The Belgian due diligence law is currently on hold though, with the Belgian liberals pulling the brakes and waiting for the adoption of the European directive before moving forward at national level. Belgium should thus have a national due diligence law by 2024.

These (proposed) due diligence laws are an undeniable call to action. In France, NGOs are already taking steps to enforce the French due diligence law. Just like Les Amis de la Terre are taking TotalEnergies and BNP to court for their involvement in fossil projects abroad, companies like Engie could be sued for its blatant lack of diligence by signing contracts with US gas companies using harmful extraction methods like fracking, which cause catastrophic damage to both the environment and communities. In this report we saw how Engie, using a code word for their negotiations with Cheniere, appeared to know that company did not have a proper waste management system, nor did it have control over the emissions policy of its suppliers. In its Investment Note, Engie also expresses concerns about the requirements of Cheniere towards "community involvement and human development," saying the US company does not seem to have clear requirements on those matters towards its suppliers. Also, Engie clearly states "the project under discussion is not susceptible to increase job creation." The French company moved on signing the contract with Cheniere anyway, even extending its terms the year after.[520]

Once the Belgian and the European due diligence laws get through, gas operators like Fluxys will also be able to be held accountable. The Belgian company has a neat "Health, Safety and Environment" policy, with a commitment towards climate targets and a declared ambition to invest in the reduction of its GHG emissions, as well as in the improvement of its carbon footprint.[521] This however is not aligned with its actual investments. Since the beginning of 2023 alone, Fluxys reportedly directed at least €867 million towards buying up shares in existing fossil gas pipelines in Europe.[522]

Also, through its key position in the boards of ENTSOG and of GIE, we could question the involvement of Fluxys in the push for gas lock-ins to be the solution to the energy crisis, whether by having the TAP expansion included in the REPowerEU plan (leading to human misery along its trajectory for the sake of "Europe's security"[523]), or by pushing recommendations to REPowerEU for "*fast-track approval procedure*" for planned and future LNG projects and for "*accelerat(ing) investments in infrastructure*" (see our chapter "Gas operators pushing for shock 'solutions'").

On a company level, Fluxys plays a central role in the surge of fracked gas coming to Europe, pushing for Dunkirk LNG, the second-largest LNG terminal in continental Europe, to favour long-term contracts. In Greece, through DESFA, Fluxys expanded the reportedly equally underutilised Revithoussa LNG terminal, in order to import more US LNG. and "secure" South-Eastern Europe.[524] This came in addition to the Alexandroupolis FSRU, also inaugurated in the "security of supply" frame. In these projects again, "European energy independence" turned out to be nothing more than a new dependence, namely on "freedom gas" from the US That same gas is supposed to arrive at the Stade LNG terminal in Germany,[525] another project involving Fluxys, which has started construction on a floating terminal and is applied for approval for its onshore terminal.[526]

Pascal De Buck, CEO of Fluxys, frames these pushes as a need to "secure Europe," guaranteeing there will be no stranded assets deriving from these investments.[527] He is overstating the utilisation rates of his terminals, saying they are used at their maximum capacity.[528] We showed this wasn't the case.[529] Also, he is not considering the evolution of demand in a gas phase-out landscape shaped by the need to meet climate targets.[530] This is yet another perfect example of the application of the shock therapy by gas operators, pushing for the continuation of their business model by using the confusion and fear of black-outs generated by the global energy crisis, and pushing for gas as the only possible solution.

Conclusions

US leaders went over the heads of local communities, who would have to be sacrificed, their lands and waters ravaged by these gas terminals which would spew their toxic emissions into their skies. European decision-makers rolled out the red carpet for LNG from harmful fracking which they had banned in their own countries.

2022 will be remembered as one of the most consequential energy crises the world has ever seen. This crisis could have been a unique opportunity: decision-makers could have gathered experts from all fronts - scientists, think tanks, NGOs - to make a thorough assessment of the risks we would face, implement immediate temporary mitigation measures, develop solid plans with climate targets in sight, and make the long-awaited shift to energy efficiency and renewable energy. Instead, the people we elected to represent our common good, and lead the shift to a sustainable future, appointed representatives of the gas industry to show us the way out of the energy crisis. This gave gas operators a golden opportunity to push for the continuation - and even expansion - of their business model. Gas was the problem. Gas would be the solution.

This cognitive dissonance was transformed into a logical rhetoric with the relentless use of shock therapy: the gas industry kept hammering on the fear and confusion caused by the war in Ukraine, in order to obscure its own toxicity and present itself as the answer to all concerns. In this gaslighting strategy, the gas industry also used the technique of divide and conquer: there would now be "bad Russian gas" from which to run away, and to be replaced by "good freedom gas" coming from the United States of America. The instability Russian gas precipitated us into would be remedied by American gas which would guarantee us security. In other words, our dependence on Russian gas would be solved by a decades-long commitment towards American gas. In parallel to US gas, companies like Fluxys successfully pushed for Azerbaijani gas to be part of the freedom package, with the European Union injecting public money into the expansion of the Trans Adriatic Pipeline (in which Fluxys conveniently holds 20% of the shares).[531] Those "geopolitical investments" (dixit Charles Michel, the president of the European Council) were going to radically redesign the fossil fuel market and change our energy future.

European companies have signed a record number of long-term contracts with US companies, betting on LNG export terminals not yet built and just at proposal stage, pushing for the final investment decisions these terminals need in order to get started. This is mirrored on the other side of the Atlantic, by a mushrooming of proposals from gas operators for import terminals to be built or expanded, from Greece over France to Germany. These projects have been supported by European banks, investing in fossil fuel lock-ins. These hasty developments have been lauded in the US by decision-makers telling their citizens they are rescuing their European allies, and by European leaders applauding Europe's recovered independence.

The architects of this 'salvation plan', however, completely omitted the reality, which shows none of this Atlantic ratchet was needed. They turned a blind eye to the utilisation rates of existing European LNG terminals which, even at the peak of imports - when it was being reported they were running at full speed - were far from being saturated. They completely glossed over the mismatch between immediate needs and long-term contracts and terminals unable to answer these needs because they would take years to make operational. They lost climate targets from sight, and forgot about the logical evolution of demand, which would condemn those terminals in advance and turn them into stranded assets to be paid for by citizens. They gobbled up the future hydrogen conversion plans the industry waved at them to get their fossil infrastructure signed off, without looking into the technical challenges.

US leaders went over the heads of local communities, who would have to be sacrificed, their lands and waters ravaged by these gas terminals which would spew their toxic emissions into their skies. European decision-makers rolled out the red carpet for LNG from harmful fracking which they had banned in their own countries.

This lock-in plan will come at a high price for US and EU citizens who, already facing an unparalleled social crisis, will have to pay for the decommissioning of these unneeded projects on which their money has been and will be spent. In addition, these investments come at the expense of real solutions which would benefit citizens - and the climate - immediately (like the insulation of their homes), while also being a guaranteed investment in a sustainable future.

Or to conclude with the words of John Beard, community advocate in the Port Arthur area: "*Europeans shouldn't think gas exported from my community is 'freedom gas'. Nothing's really free. If it means freedom because you're independent of a former source, the Soviet Union, then you're just trading one form of slavery for another. Because now, even though you have a good relationship with America, you're still being enslaved by this gas that causes so many problems and troubles. All of this trouble was behind gas. It's not freedom gas because you're really not free. It's going to cost you. It's going to cost you more and it's going to cost you in the long run. Because the more you use it, the more peril it places on your life and health, and the life and health of people across this entire planet. Climate change is real. We see it here every day.*"

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Recommendations

The latest IPCC (Intergovernmental Panel on Climate Change) report is clear[532]. This decade is critical for making rapid, deep cuts to emissions and protecting people from dangerous climate impacts[533]. These warnings are reinforced by UN Secretary-General António Guterres: "Fossil fuels are a dead end – for our planet, for humanity, and yes, for economies".[534]

We cannot afford any more fossil fuels. Our communities – especially those already on the frontline of climate disruption, pollution, and extreme weather – and our environment cannot take more projects that extract, process, ship, or burn coal, oil, or gas.

Yet, when Russia invaded Ukraine on 24 February 2022, and the resulting energy crisis hit, the gas industry and decision-makers quickly found each other in framing this as a 'supply crisis'. They dusted off or drew up reckless plans for new and expanded polluting infrastructure, and rushed them through under the pretext of 'security of supply'. If left unchallenged, the result will be decades more of fossil gas lock-in, with devastating impacts on people and the planet.

This crisis, born from our dependence on fossil gas with its inherent price volatility, its disastrous impact on our communities, climate and environment, should be a golden opportunity to rise to the challenge of what is really a 'demand crisis'. Belatedly the European Union put in place a voluntary demand reduction target of 15%, though limited in time and not part of the needed trajectory of phasing out gas entirely.

This marks a failure to look seriously at our energy system and its impacts, and translate climate objectives into short and mid-term energy reduction and transition targets. A failure that hands over power to the fossil fuel industry rather than have it regulated.

We have no time to waste. From now on, every policy process and investment decision, every permit granted or withheld, every bit of infrastructure built, every use of public money, must be a step towards a fair and just energy system fully liberated from fossil fuels - including gas.

Firstly, this requires cutting the ties between politics and the gas industry, setting and enforcing stronger transparency and due diligence policies. Secondly, it needs a new horizon for climate neutrality by 2040, both in Europe and in the US; a rational assessment of emissions and industry proposals like hydrogen and carbon capture technologies (CCS/U); and no new long-term contracts or infrastructure voiding that ambition. Finally, it means redesigning our heating and cooling, our electricity and industry, using renewable energy sources together with technologies and expertise that reduce demand.

Demands For Europe

A. CHANGE THE SYSTEM

For decades the gas industry has had easy access to our political decision-making processes. From meetings with policy-makers, to over-estimating gas demand and proposing infrastructure to meet it, to outright holding the pen on crucial legislation, the industry holds sway. This contrasts starkly with the murky veil it maintains over its own operations and its value chain.

A.1. **Remove fossil fuels from politics[535]**, by:

1. instituting a firewall to end their access to decision-making including through lobby meetings and seats on expert, advisory, or public research bodies;
2. ending conflicts of interest, revolving doors between public office and industry, hirings of industry consultants, and other ways of protecting and facilitating vested interests;
3. excluding fossil fuel industry representatives from climate negotiations, government delegations, trade missions, or other positions of co-opted influence; and
4. rejecting partnerships with the fossil fuel industry, including sponsorships, appearances at each other's events, and organising industry occasions on government premises including parliaments.

A.2. **End ENTSOG's lobbying on behalf of the gas industry**. ENTSO-G - created to ensure, *inter alia*, "optimal management" has a privileged relationship with European policy-makers which presents a conflict of interest, through its role to predict future gas use and propose the infrastructure projects to meet it. ENTSOG has consistently overestimated future gas demand[536] and projects backed by ENTSOG members have raked in the vast bulk of European public funds for such infrastructure[537].

A.3. **Ensure full transparency of all available data on gas flows** into, within and out of the EU, including and separating into import, export, re-export and transshipments (including ship-to-ship transfers), as well as on utilisation rates of regasification capacity and trans-border pipeline connections.

A.4. **Further strengthen, adopt and enforce due diligence legislation** at European and nationals levels.

B. PHASE OUT GAS

By 2050 Europe wants to be the first net-zero continent. Factoring in both historical responsibility and modern solidarity, it should be climate-neutral by 2040. This is a long-standing demand of the climate movement, supported by UN Secretary-General Guterres[538] on the back of the latest IPCC report. More investments in gas infrastructure and long-term contracts risk derailing this objective, which is vital for keeping the 1.5°C target alive.

B.1. **Set targets for climate neutrality by 2040 in the EU and the US**, and develop pathways (including detailed greenhouse gas budgets) to get us there. In the EU in particular, work throughout 2023 must lay proper foundations for an ambitious proposal to be presented in Spring 2024[539], under the Belgian EU presidency and in a context of European parliamentary elections.

B.2. **Pursue an active fossil gas phase-out by 2035**. This requires not only proactive phase-out policies at the national level including measures such as banning instead of subsidising gas boilers and providing tailored financial incentives, but also coordinated action to stem the flow of gas into Europe, phase-out existing gas import and transport infrastructure, and prevent future lock-in by stopping new construction and banning long-term contracts. Due to its higher carbon intensity and risk of methane leaks, **imports of LNG should be phased out first**.

1. Set **mandatory gas reduction targets** at EU and national levels, gradually increasing the current (still voluntary) target of -15%[540]. In order to **reduce energy demand fairly**, energy savings must be sought in industrial sectors first, then commercial sectors, and then at the level of wealthy households and individuals, while supporting and protecting the most vulnerable, through financial support schemes to meet their basic energy needs, and a ban on disconnections.

2. Cancel all projects for the construction of new LNG import terminals and expansion of existing terminals across the EU. Current capacity is being underutilised, EU gas demand is set to fall under climate targets[541], leading to even lower utilisation rates and higher risks of stranded assets[542], and reports even show **no new LNG infrastructure** is required to meet Europe's energy needs if the EU 'Fit for 55' climate and energy package is implemented and ambition is ramped up[543].

3. Halt the conclusion of new **long-term contracts for the delivery of LNG**, and ban extension of existing contracts. No gas supply contract should be allowed to run beyond 2035, nor create a barrier for the development of renewables.

B.3. **Properly account for the higher lifecycle emissions of LNG** compared to pipelined gas, in developing pathways and efforts in order to get us to climate neutrality by 2040. With European LNG imports being responsible for up to four times more CO2 than pipelined gas, as well as the increased risk of methane leakage in the more complex production chain, not accounting for these impacts of the recent increase in LNG imports through more efforts elsewhere, risks jeopardising our climate targets.

B.4. **Critically assess hydrogen projections and projects** pushed by the fossil fuel industry, including claims of "hydrogen readiness" (which may be technically feasible, but not necessarily justify the construction of additional gas infrastructure), "terminal conversion" (which has been shown to be a technical and financial challenge[544]), and "green" or even "renewable" hydrogen (for which detraction of direct electricity use it would be hard to see a meaningful application before 2030).

C. REDUCE CONSUMPTION; BOOST EFFICIENCY; EXPAND RENEWABLE ENERGY

Policies and measures are needed to support urgent measures that provide the services required from energy but do not rely on fossil gas through rapid expansion of systems and mechanisms that reduce consumption, expand efficiency and renewable energy sources.

Energy Saving and Conservation measures to reduce demand**:**

Efficiency (incl. insulation) - in Building and Industry: Renewable heating (like heat pumps); Building renovation heater efficiency in buildings; efficiency in industrial processes.

1. Financial support schemes for vulnerable people to meet their basic energy needs
2. Ban disconnections e.g. energy providers should not have the right to cut off customers who fail to pay their bills, in particular vulnerable ones
3. Drive deep building renovations and sufficiency that can realise the potential to permanently cut demand by improving the energy performance of buildings.

Power production – Maximise measures for renewable power sources at all public, commercial, and industrial sites and operations. E.g. solar panels on rooftops, install heat pumps and undertake renovation measures.

Industry – where possible be fully electrical and more circular, while always prioritising energy saving.

Tax fossil fuel profits: to help meet the investment needs of the energy transition, ensuring the burden does not fall on citizens and the rest of the economy.

Demands For the US

The passage of the Inflation Reduction Act (IRA) marks a turning point in the U.S. Climate Policy. For the first time, Congress has acted to curb demand for fossil fuels, but has left fossil supply unconstrained. As a result, the U.S. finds itself in a trap where declining domestic demand coupled with high production could fuel a surge of exports. These exports are a form of "carbon leakage" and if left unconstrained could erode the emissions reductions in the IRA.[545] What's more, continued domestic production is a threat to the health of communities all along the fossil fuel supply chain. A more robust climate policy would pair demand-side reductions with policies to phase out fossil fuel production.

Long-term gas supply contracts will lock-in both the U.S. and EU into decades of emissions at the expense of our climate and the health and safety of communities. LNG companies right now are signing export agreements that risk locking the US into decades more drilling, infrastructure buildout, and exporting. On the buyer side, these contracts lock import countries into decades more fossil gas consumption, and delay investment in renewable energy and efficiency. Leaders from these nations have the climate and moral imperative to cut off the gas industry's decades-long hold on our energy future.

US policy makers must take the following steps to align LNG exports with strong climate goals:

- Reject federal permits for any **new infrastructure** projects that would increase greenhouse gas emissions or worsen the climate crisis. This requires that any new pipelines or new LNG export terminals be rejected.
- Reject federal approval for any LNG export **shipments from existing or approved terminals** that are inconsistent with 1.5°C pathways, worsen domestic energy poverty, or pose health threats to nearby communities.
  - The Department of Energy (DOE) has the authority to overhaul its "public interest" determination (which governs LNG exports to non-free trade agreement countries) to explicitly consider climate change, environmental justice and energy justice.

  - DOE should hold hearings and take the necessary steps to document that the cumulative lifecycle emissions associated with LNG exports are inconsistent with our climate goals and contrary to the public interest. Where needed, DOE should revoke approvals or set time limits for exports from existing terminals.

- DOE should make public the long-term contracts signed between LNG sellers and buyers.
- President Biden must wield his global leadership and support ending international public finance for fossil fuels, including LNG, at the G7, G20 and COP28.

Both Biden and Congress must take further steps to protect the climate and communities living on the fence lines of the fossil fuel supply chain. Such policies include:

- Establish a national plan and targets to wind down existing fossil fuel production and infrastructure.
- Eliminate federal fossil fuel subsidies.
- Ban new fossil fuel leasing and permitting on public lands and waters, and phase out existing leases.
- Phase out exports of crude oil and reject federal permits for any new crude oil export terminals.
- Enact regulations to eliminate methane emissions and flaring from oil and gas facilities.
- Require air and water pollution reductions in polluted communities by implementing a comprehensive "No Pollution Hotspots" policy.
- Pass the Environmental Justice for All Act to provide legal remedies to citizens, improve equity mapping tools, expand grant programs, and strengthen consultation with impacted communities.
- Build on the renewable energy incentives in the IRA to enact a Green New Deal that will direct trillions of dollars in public investments to create millions of green union jobs, rectify past injustices, and ensure that energy-dependent workers and communities are left better off through the transition.

Annex 1. Research Methods

Natural Gas Conversion Factors

Natural gas volumes at national scales are typically reported in units of billion cubic feet (bcf) or billion cubic metres (bcm) of gas. Cubic feet are commonly used in the US while cubic metres are used in Europe. Rates of natural gas exports are often reported (i.e. by the US Energy Information Administration, or EIA) in units of billion cubic feet per day (bcf/d). When natural gas is liquefied it is often reported in units of tonnes (also known as a metric ton, which is a unit of mass and is equal to 1000 kg). A common unit for LNG contracts or exports is million tonnes per annum (mtpa).

We use the following factors to convert between different units of natural gas and LNG:

- 1 cubic metre = 35.3147 cubic feet
- 1 billion cubic feet per day (bcf/d) = [1 bcf/d] * [365 d/y] * [1 cm / 35.3147 cf] = 10.34 billion cubic metres per year (bcm/y)
- 1 million tonnes per annum (mtpa) of LNG = 48.028 billion cubic feet (bcf) of natural gas[546]

Analysis of LNG import into the EU

The analysis of LNG import into the EU + UK was done using 3 different databases. The first one used is the ENTSOG Transparency Platform[547], which uses data directly provided by its members the European gas operators. From this dataset we were able to extract the physical flows of gas into the EU by compiling the sum of the flows in each import point in 2021 and 2022. Secondly, added to this dataset was the ALSI (Aggregated LNG Storage Inventory) database[548] from Gas Infrastructure Europe. This database provided historical and real time data on the send-out, storage, and maximum capacity of all LNG terminals across Europe with data provided by the gas operators. And thirdly we used the EIA database on US gas exports[549] by country. This gave us the needed historical data for US exports to the EU and UK from 2018 - 2022. These three databases were then used to compile the total imports of US LNG, total LNG, total pipelined gas, and other numbers throughout the report. Figure 7-10, and 12 used the sum of US imports of LNG 2018-2022, converted to bcm. Figure 11 combined the GIE total LNG import data with the EIA data to have a full view of the total LNG imports.

Analysis of EU LNG infrastructure

For the analysis of new EU LNG infrastructure we used the valuable information provided by the Global Energy Monitor, in their wiki mapping the global gas infrastructure,[550] but also in their recent reports such as the EU 2023 Gas Tracker.[551] This, combined with other sources gave us up to date information about the buildout of LNG infrastructure in the EU.

For determining the utilisation rate of EU LNG import terminals in 2021 compared to 2022, the ALSI database of Gas Infrastructure Europe[552] was the starting point to obtain the data for 'yearly send-out' and 'yearly maximum capacity'. These values were then divided to obtain utilisation rates for 2021 and 2022. Due to the consequences of Brexit on GIE's monitoring, data for the UK are not fully available and not included. The results are shown in figure 15.

Analysis of LNG Purchase Contracts

For our analysis of LNG contracts we utilized the Bloomberg NEF Global LNG Contracts database (version Q4 2022, current up to December 31, 2022). We selected all contracts with "Export Market" as the United States, and excluded any contracts marked Expired, Inactive, or which did not specify start year, end year, or volume. This left 130 contracts in the subset used here. This subset does not include new contracts signed in 2023, some of which are discussed elsewhere in the report.

This subset includes contracts for operating, under construction and proposed LNG export terminals in the US The subset primarily consists of Sales and Purchase Agreements (SPAs), but also includes Heads of Agreements, Tolling Agreements and other types of agreements. Figures 19 and 20 show total contracted volumes from this subset from 2015 to 2050, as broken down by Import Market region (Figure 19) and Buyer type (Figure 20). Volumes are reported in mtpa and converted to bcm/y using the factors above. The figures assume that annual contracted volumes begin in the adjusted start year and continue until the end of the contract period.

These contracted LNG volumes are compared against US peak LNG export capacity for operating and under construction terminals (see below), and against estimates of LNG trade taken from the International Energy Agency's Net Zero by 2050 report.[553] Figure 4.17 from the IEA report estimates global LNG inter-regional trade and LNG exports from North America out to 2050 in their Net-Zero Emissions Scenario (data taken from tables available on IEA website).

US LNG Exports by Destination

Figures 22 and 23 show US EIA data on LNG exports by destination.[554] Figure 22 breaks the data out by region, dating back to the first LNG shipments from US terminals. Figure 23 shows exports to the top 4 countries in both Asia and Europe.

US LNG Export Capacity

Figures 24 and 26 show the approximate timeline of peak US LNG export capacity. These figures are based on the US EIA's liquefaction database.[555] Figure 24 focuses on operating and under construction terminals, and attempts to recreate and update figures previously published by the EIA.[556] Figure 26 extends Figure 24 to include all approved terminals and expansion projects, but does not include proposed projects that have not been approved. For existing and under construction terminals we plot "peak nameplate capacity", whereas for approved terminals we plot "proposed design capacity" as reported by the EIA.

For operating terminals the timeline is given by the EIA's reported In-Service and Start of Commercial Service dates for each liquefaction train. For approved terminals and those under construction we estimate start dates based on media reports[557] and estimates from the Sierra Club LNG tracker,[558] although we note that all such dates are highly uncertain and should be considered rough estimates. It is possible that many approved terminals will never be built. Export capacity is also compared with the IEA's NZE estimates for global and North American LNG exports.

US LNG Exports Terminals

Tables 3 and 4 and the map in Figure 25 represent our best current understanding of the state of play for US LNG export terminals, as of March 2023. Table 3 summarises the status of seven operating terminals, three under construction terminals, and their various proposed expansions. Table 4 summarises the status of ten approved terminals and five terminals that are currently under review by regulators. It does not include various proposed projects that have not yet advanced to review. Status information is taken primarily from FERC,[559] MARAD,[560] and EIA, as well as company press releases and media reporting.

Analysis of Big Oil's profits

To analyse the the profits of the The "Big Five" oil and gas companies (ExxonMobil, Chevron, Shell, BP, and TotalEnergies), the annual reports of each of these companies was reviewed to compare the profits that they made in 2021 and in 2022 in figure 27.[561] Regarding the stock value increase of these companies in figure 28, the respective difference in stock value of these companies was reviewed from 1/1/21 versus 31/12/22. The data was extracted from Google Finance which has up to date stock value information about these companies.[562]

Financing fracking

For the chapter on the financiers of two selected LNG terminals, Sabine Pass and Corpus Christi, data was used from the finance dataset of the Sierra Club LNG tracker.[563] These were then geographically divided according to the financial institution, and compiled to have a view for who is investing in these LNG terminals by giving loans or underwriting their bonds. Added to this, the Oil and Gas Policy Tracker[564] was used to compare the policies of these banks on financing fracking, and their actions by investing in these shale gas supplied LNG terminals.

Cheniere LCA Methodology

The discussion of Cheniere Energy's cargo emissions tags and the published lifecycle methodology paper[565] is drawn from previous analysis published by Greenpeace USA and Oil Change International. This work was published as a report,[566] and as a Letter to the Editor of the journal *ACS Sustainable Chemistry & Engineering*.[567] The original authors also responded to our critique in the journal.[568]

Environmental Justice

The discussion of fossil fuel racism and the public health impacts from LNG export terminals is based on a previous report published by Greenpeace USA, Gulf Coast Center for Law and Policy, and the Movement for Black Lives.[569] That work was supplemented by recent regionally-focused reports and media articles detailing impacts from specific LNG projects. We also made use of environmental justice metrics collected by the Sierra Club LNG tracker that makes use of CEQ's Climate and Economic Justice Screening Tool[570] and the EPA's EJScreen tool.[571]

Equivalent in emissions in cars and renewable energy

Throughout the report, various comparisons were made using the EPA's Greenhouse Gas Equivalencies Calculator.[572] To calculate an LNG terminal's equivalent emissions in the amount of cars per year (X), the EPA proposes a formula: 4.640 metric tons CO2 emissions/vehicle /year. To rephrase the formula, the emissions in MMT were divided by the EPA's formula to obtain X.

In terms of the calculations for the equivalent costs of new onshore renewable wind energy in megawatt-hours (mWh), IRENA[573] estimates that the global weighted average Levelised Cost of Electricity (LCOE) for onshore wind in 2021 was 0.033 USD/kWh. On page 24, IRENA defines the LCOE of a given technology as "the ratio of lifetime costs to lifetime electricity generation, both of which are discounted back to a common year using a discount rate that reflects the average cost of capital." To reiterate, monetary sums are multiplied by the formula (taking into account exchange rates (GPB, EUR, US, SWE)) then multiplied by 1000 to obtain the result in megawatt-hours.

Annex 2. Transcript of John Beard's Interview

Destiny Watford is a climate campaigner with Greenpeace USA. She leads the organisation's work to partner and campaign with local and frontline organisations in the Permian Basin – located in West Texas and New Mexico – and Gulf South regions. Destiny founded Free Your Voice and leads the fight to prevent the nation's largest waste-to-energy incinerator from being built in her community of Curtis Bay, Baltimore. After four years of organising, the students of Free Your Voice successfully pressured both Baltimore City and Baltimore City Public Schools to terminate their energy contract with the company and currently the company's plans are stalled. Destiny won the 2016 Goldman Environmental Prize for her work and continues to push the Maryland Department of the Environment to return control of the proposed incinerator site to the community.

John Beard, Jr. is the founder, president, and executive director of the *Port Arthur Community Action Network* (PA-CAN). He serves as a community advocate focused on environmental issues and community development in the Port Arthur/Southeast Texas area, sits on numerous boards and commissions with the City of Port Arthur, and has over 32 years of public service as an elected official–9 as city councilman and mayor pro-tem.

John worked in the petrochemical industry for 38 years, with practical training and experience specifically in maintenance services, process operations, health, safety and environmental issues, emergency management and incident command systems.

John was educated in the Port Arthur public school system, and attended Lamar University, with a concentration in the areas of political science and economics. As an active member of his community, John has dedicated his life and career to serving the public.

Timestamp: 00:00

Destiny:

My name is Destiny Watford and I'm a climate campaigner with Greenpeace USA. I am joined by John Beard who is an amazing activist in Port Arthur, Texas working with the Port Arthur Community Action Network. John, I will let you introduce yourself before we get to the questions.

Timestamp: 00:25

John:

Thank you for that gracious and lovely introduction. John Beard here. I am in ***Port Arthur, Texas*** and what I call the "Belly of the Beast," in the heart of the petrochemical corridor of Southeast Texas. In the "belly of the beast" so to speak. If you look at a map or look at the Weather Channel, Port Arthur Texas is where the southern part of Texas meets the southern part of Louisiana on the west side and the Gulf of Mexico all come together. And why I say we're in the "belly of the beast" is because everything that's in play in this movement–from carbon sequestration to hydrogen hubs–is being talked about here.

The ***largest petrochemical refinery*** in the country is here in Port Arthur along with several other smaller companies, but they are still some of the largest (companies) in the world. The second largest refinery in the country is located only 15 short miles away from Port Arthur. And then we have numerous other chemical plants and other types of refining and petrochemical and plastics production facilities here.

Along with that is rampant pollution over 12 decades of industrial pollution that has affected the lives and health of many people here in my community, myself included. So this whole issue with regard to the petrochemical buildout, with regard to shipping gas–LNG–and crude oil to other parts of the world is of extreme interest not just to me but to others here because of what it means for our community, for the lives and health of our people, and what it also means for the entire planet. So we think it's very important to have these kinds of discussions that talk about it. I'm looking forward to your questions, Destiny, and see if I can give them good answers and and hopefully give people some information that they

can really use to better understand as I like to say, "why we fight, why we push back" against the expansion of using more and more fossil fuels and why we advocate for the phase out of those fossil fuels and an equitable transition to clean, green, renewable energy for all.

Timestamp: 02:37

Destiny:

John, what are the impacts of LNG development on your community?

Timestamp: 02:41

John:

Well, there have been a number of factors involved with that but I'd have to preface talking about the impacts of LNG development by saying that first of all, this expansion is coming into an area that has already been overrun, as I said earlier, for over 120 years by petrochemical industrial pollution. So the worst polluters in the country are here. The third highest emitter of benzene in this country, who is also an LNG exporter, Total, and ***Total's Port Arthur Refinery*** are located here. And then you also have ***Valero, which over a five-year period had over 600 air quality violations***. And then to top that off, you have ***Oxbow Calcining***, a Koch Brothers company that is what I call a "serial polluter." They've been grandfathered in for the last 20-25 years or better. They have emissions that are well over 11,800 tons of highly toxic sulphur particles: sulphur dioxide, sulphur trioxide and particulate matter…particulate matter so fine that if you could scoop some of it up from that pile of over 11,000 tons, you could take it and pour it like you would pour a glass of water. It's just that fine and just that miniscule.

Into that mix, here comes ***Exxon Mobil's Golden Pass LNG***, when they were talking about importing gas from Qatar and the other Middle East countries to America. Now it's being converted to an export facility. Right across the ship channel, Sabine nature's waterway in Louisiana–we are on the border with them–is one of the largest exporter's the country, ***Cheniere's Sabine Pass LNG***. But then just recently final investment approval has been given to a third LNG to come into Port Arthur, less than five miles from my house. And that is ***Sempra's Port Arthur LNG***. But we're going to call it Sempra's LNG because I don't want something as deadly as that and the effect is going to have on my community, named after my community. So it's Sempra's LNG, as far as I'm concerned.

But all of that coming here creates severe health problems when those things are built. We are already seeing the effects of some of it with the Cheniere plant. They're trying to get an extension or a waiver on their ***formaldehyde emissions*** that come from their plant. Well everybody knows that pretty much formaldehyde is what's used in embalming fluid. So now we're breathing in air that has embalming fluid technically in it so to speak. Particulates that have that. And the bad part about having those particulates in the air, if you breathe it or ingest it because of the structure of those things and structure our bodies, that it gets into your bloodstream through the air that you breathe. So that's how we get these toxins and those toxins cause mutagenic changes in our body's cellular structure which can cause cancer and other diseases or it can also cause pathogenic problems that affect your health and affect the physiology of the body like respiratory disease, COPD, asthma, allergies, you name it. A lot of people here suffer from that.

The impact of LNG on this community will be serious and far-reaching, and it will touch everyone that lives here. But I tell folk all the time, "Don't take my word for it, come and see for yourself." And in a matter of hours, you'll begin to say, "why is my nose itchy or feel like my throat scratchy? My eyes are kind of irritated, like I'm coming down with something. I'm perfectly well. I haven't been sick in a while and I wasn't sick when I left home to come here." But in a matter of hours, that's what's going to happen. You'll feel the effect of that. And when you leave, pretty soon after, the effects will go away. I've had a number of people tell me that have come to visit. So you know that's going to just add to a problem that is already extremely severe.

So essentially what we can say is we're being sacrificed so Europe and other parts of the world can have this very toxic gas that is not only going to hurt us–in terms of its production out in the Permian and brought to the Gulf of Mexico for export from here–but it's going to, in the process of doing that, make the atmosphere, make the air and conditions in the environment worse here for people in Port Arthur. It will exacerbate climate change, and being that we're on the Gulf of Mexico, sea level rise is a great concern.

As a matter of fact, Port Arthur is protected by a ***storm lift***. And that storm lift is already being discussed to be raised two to three feet because of climate change. Now if our own government can recognize that and recognize the need to protect areas and cities like Port Arthur, then why are they allowing this to continue anyway? Why are they doing more of what's causing the problem instead of doing less.

So we've got to find a way out of this and you can't, as they say, "decarbonize"—stop putting carbon in the atmosphere–by recarbonizing or doing more of the same thing that's put the carbon in the air in the first place.

We've got to be a lot smarter than that. I hope we are.

Timestamp: 08:10

Destiny:

Wow, on that note, of a lot of these policies getting passed that perpetuate the problems in Port Arthur, I'm curious about how you're engaging with local authorities and decision makers?

Timestamp: 08:24

John:

Well we're working on that to some degree, but largely our battle is with the people. It's about educating people, about educating the community, about hearing from them the very concerns I told you about–the health effects. We've got to somehow tie those health effects into what these companies are doing, and it hasn't been done yet.

In 2010, Port Arthur was selected by the US EPA as an environmental showcase city. And what that means, I don't know. They did say in the course of this big meeting they had at our civic center for the entire city, that Port Arthur had over twice the state and national average for not only cancer, but heart, lung, and kidney disease. And those are some of the diseases that are really rampant here. What makes it worse is that 80% of the folk here in this town, who are economically disadvantaged, ***do not have medical insurance***. So, how are they going to get treatment? How are they going to get the help that they need?

Our battle is not just with the people but also with elected officials too–educating and informing them. In the case of some of these projects, they see dollar signs because it's more tax revenue for the city that's going to enable them to do more to help the citizens, but that's not happening either. It's not working that way for some for whatever reason.

Being a former elected official I'm a bit puzzled by it, but we can't sacrifice people's lives and health just so we can run the mechanisms and the wheels of government. We have to do something different. We have to do something better. So our job is not only to educate the people but to educate the elected officials and hold them accountable when these companies don't comply with the law, when these companies have fires or explosions that affect the lives and health of people. We have to constantly raise those questions, raise that flag, call community meetings together, invite those elected officials to hear from us and see the evidence and see the information and then challenge them to do better. When you know better, you do better. We're gonna give you all the information you need so you can know.

The industry does the same thing. They love to go and sit down and invite [elected officials] to lunch and talk with them about it and talk about how they can do these different things. But they always give you this one pitch, Destiny. They always talk about the fact that "oh, this project is going to bring jobs." Well if it's bringing jobs and there's over 80 billion dollars of industrial expansion going on in Southeast Texas, then why does Port Arthur have such high

unemployment? Our unemployment is the third highest in the state on average. The only places that [have higher unemployment] are down in the valley, Brownsville and Edinburg, and those cities near the Mexico border who don't have a petrochemical industry. You know what their base industry is? Tourism. And here we are with these high paying jobs, they like to say, and it's the petrochemical industry that oils the world, that does all these great wonderful things but if you come visit Port Arthur, you'll see that all those great and wonderful things ain't here.

I hate to say it reminds me of a phrase I've heard a comedian say, "Port Arthur looks like Beirut or Iraq or some places that have been bombed out and depleted with a lot of vacant homes and houses, vacant lots, dilapidated structures, poor infrastructure, bad streets." To say that we're in the midst of all of this wealth, there's so much poverty here. Two-thirds of the people here are economically disadvantaged. That's a family of four making less than $35,000 a year. The ***poverty rate here is between 27% and 30%***. It's a family of four again making less than $18,000 a year. So you can imagine in the city of 55,000, that's a substantial number. But yet, with all of this wealth from the petrochemical industry that's not doing us any good. And in the meantime we're suffering because of the pollution that's already in the air and now the additional pollution that will come from three LNGs potentially being in very close proximity to this city. That's unacceptable in my mind. We're going to have to do better. We're gonna have to challenge our elected officials, we're going to have to challenge ourselves to do better and to change what's going on for the better. Not just for Port Arthur but for all the other cities in the Gulf South.

Timestamp: 12:44

Destiny:

So you say that we need to challenge ourselves and challenge our policy makers to do better and decision makers to do better, and I'm curious about what you think about Europe banning fracking for domestic production while also closing deals with companies in your very own community?

Timestamp: 13:08

John:

That's interesting. That's really very interesting because to get that extra gas and why we have such a great abundance of it now, we had to use fracking to do it. And they've outlawed fracking way before we did because they saw the effects of it. And the effects largely were earthquakes, polluted and contaminated underground water sources–aquifers and springs. All of those were adversely affecting what people need. You need water more than you need oil because you certainly can't drink oil. But you definitely need fresh clean water to live. That's essential.

They stopped it [in Europe], but they still want our gas and to get them that gas we've got to frack to do it. Because of the way the industry operates–they're not required to police or take care of their business where they should–a lot of that methane that they're trying to get out of the ground is released directly into the air. It either leaks off or it's burned off by flaring.

For Europe to feel comfortable using our gas while we take on the additional burden of fracking–and also the fact that that gas is going to adversely affect our climate and theirs–I think that's very short sighted. Europe has to up their game also. They have to have a better understanding that just because they have a need that we can supply, that need is going to hurt both of us. The commonality of us all living on this one planet, sharing this one piece of Earth, a rock we're on, and the air and water that's here, what happens here is going to eventually happen to you. The fracking that's happening here to give you that gas is going to in part–because of the use of that gas in your country–contribute to climate change, and global warming, and sea

level rise, and the extremes of weather and all that comes with it.

Is that a price to pay that Europe wants to pay for itself? Is that a price that they want us to have to pay so they can have that kind of, you know, lifestyle or be able to do that? I don't think so. We have to challenge them. We have to tell them that what you're doing to help you do this is hurting us.

But like I always say, Destiny, don't take my word for it. Come to Texas and see. Come to the Permian Basin and see where they are drilling and how they're flaring. Look up some information from "***Texas Sharon***," Sharon Wilson, that does these optical gas imaging photography of these various facilities and see how much is just leaking away into the air. Not to mention burned into the air, but leaking from well heads, from tanks and other pieces of equipment. And that, too, contributes to climate change and global warming. And now we're going to take that same gas and send it to Europe for them to do more of the same.

There's a saying for that, "doing the same thing while expecting a different outcome is insanity," to keep doing what you know is not good for you, but you do it anyway. That's not very smart, may not be insane, but it's definitely not very smart. So we've got to change that. We've got to get Europe to look at not just banning fracking domestically for them, but ban the use of a toxic fossil fuel called methane or natural gas.

We've got to stop doing it. If you stop [Europe] from using it, if they decide not to use it and phase it out and other fossil fuels out, then that leaves less of a market for [companies in the US] to sell to. And with that lessening of that market, we get other nations to say "we ain't accepting it either." Then we can stop this thing. We can get a grip on it because we have way more than enough gas for our own use and we need to phase that out too. So you know that's just part of the challenge that we have before us.

We've got to rise up to it. Everyone has a part to play in it, whether you're at home or whether you're in this movement like we are, everyone has part to play and can make a difference.

Timestamp: 17:20

Destiny:

What would you say to people that are referring to gas getting exported from your community as "freedom gas"?

Timestamp: 17:43

John:

Well, it depends on what you mean by freedom gas. Because nothing's really free, and if it means freedom because you're independent of a former source, which is the Soviet Union if we're talking about overseas and Ukraine, then you're just trading one form of slavery for another. Because now, even though you have a good relationship with America, you're still being enslaved by this gas that causes so much problems and causes so much trouble.

All of this trouble was behind natural gas. That's in part why Russia invaded Ukraine: to have access to the Caspian, and those other seas and shipping lanes to be able to export this gas. That's why they seized Crimea, so they would have an outlet so they would not be landlocked and stuck in it. This goes all the way back to WWII, when the Germans were finally defeated, and the spoils of war were supposed to be divided up between Russia, and the United States, and England. And the United States and England carved out their part and said, "I got mine and you get the rest," and left them with crumbs. And that's why they were constantly trying to get back some of these various nations that were in the eastern part of the Soviet block. But that's kind of digressing and giving you a little brief history lesson.

But it's not freedom gas because you're really not free. It's going to cost you. It's going to cost you more and it's going to cost you in the long run because the more you use it, the more peril it places on your life and health, and the life and health of people across this entire planet. Climate change is real. We see it here every day. It's seen all over the world on newscasts every day. It is happening and it is because of our behaviour using these fossil fuels that make that happen.

And you know something else they like to say too, Destiny, they like to say, "It's cleaner. It's not as bad as the other stuff we use. It's not as bad as coal." But what you have to remember, and my science teaches me this and my background in this is that: anytime you combust or break apart a carbon molecule, hydrocarbons or carbon-based molecules, virtually everything on this planet that is not metallic that has an organic origin is a hydrocarbon or a carbon-based molecule. So anytime you break those molecular bonds that hold that carbon together, you release some of these gases, you release toxins and toxics, you release particulate matter and you also release some moisture. But all of those things individually, create this problem that we have.

So how do we get out of it? You know what? What do we do?

We got to phase out the use of them and the best way to do that is to do what my Indigenous brothers and sisters say, "Keep it in the ground." It's buried in the ground for a reason. That's to get rid of it. That's why it's in the ground. So let's keep it there. And let's do something that honors and cherises the Earth that we all share, that will help us clean the air that we have and breathe better and live better. And then let's make the transition be equitable and fair so that no one is left behind. So that there are good paying, union jobs that can help everybody take care of their families and feed themselves and live the type of life they want to be able to live. So that there's no want in a country that's prosperous as this, and doesn't have that kind of poverty anymore.

That's a transition that people should be able to engage or believe in and want to be a part of. And that's the challenge that we have. It's not free, but what we can do is free ourselves from the problems that come from using this gas while at the same time, have a cleaner, safer, fairer, more equitable world for everyone. That's our mission. That's our job. That's our challenge. And I think as I say all the time, "It's the greatest challenge of the age." And it's a great time to be alive now being part of that.

Very few times that you have a challenge or something coming to your life that really brings out your best that you've got to do something not just for you, not just for your neighbors, but for everyone, for the whole world. So we're faced with this challenge, and we need to rise up and meet it. And we need to meet it square on, and we need to not be discouraged by some of the little small setbacks because, I'm not saying I've been to the mountaintop, please let's not go there. I believe we're going to win. I believe we have already won this battle but there are things we have to do in the interim to get to that point where victory is won. But we are going to win that victory.

Those companies have billions of dollars, but there are billions of us. And if we join hands at hearts, we can make a difference. We can move mountains that people said weren't possible. All we have to do is to look at that mountain, believe and trust in each other, and say "mountain be moved." And it will move. We will change it. I believe that with every fiber of my being. I want to be part of it, and I hope you do too and I hope whoever sees this wants to do the same.

Let's go get it. Let's get after it. Let's make it happen, because it won't happen without us. It won't happen without each other. And we can make the difference, all we got to do is come together and work for it, pray for it and it will come to be.

Timestamp: 00:04

Destiny:

John, how transparent are the processes for new LNG infrastructure?

Timestamp: 00:13

John:

That's an interesting question. For people who work in this space and deal with it, dealing with the federal agencies and the permitting with that and the local estate agencies, it's difficult, but not impossible. But for people who are not as trained in it or exposed to the various agencies and who have authority over what, based on what type of project it is, it can be very daunting to overcome those processes.

Most of the time, you have the public comment period or you have the opportunity to request a public hearing on those things. But I think rather than us having to request them, that these federal and state agencies need to seek out those communities where these projects are and engage and work with them with regard to the projects. I think that would do a lot more and serve the greater good a lot better than simply having the companies do their thing and the government does its thing and you're left to figure out, well how do I get involved in these processes? Where do I fit in? How do I say I don't want that pipeline? I don't want that LNG facility? Or I don't want this next door to our houses? How do you have a role in this, and be heard and be effective? I don't think the system works or is even designed to work for the people that it affects most. If it were, then we wouldn't have sacrifice zones.

LNG facilities and other petrochemical plants wouldn't just be here in Port Arthur or in Lake Charles or in Freeport. They'd be in places like Beverly Hills. They'd be in places like Madison Avenue. They'd be in places like in Houston, in River Oaks or in other places of affluence and wealth because those people have the means to fight back. They can hire lawyers. They have the tools to be able to address these things when it happens. That's why you notice none of these things happen in areas like that.

They happen, basically, where there are poor people because, as one of the heads of industry I heard say once, "that's the path of least resistance." That is where people have the least ability to fight back. And [the companies] can have [its] way and manipulate the government side of it, [the companies] can manipulate the public opinion. [The companies] can do a number of things like that.

But these processes need to be, as we say, "of, by, and for the people," who they affect. It's not just about the company. The company's goal is only to make money and seek the best return for its stock and shareholders. But this should not happen at the risk and the forsaking of the lives and the health of the people who are going to be impacted by these projects. If people don't want it, it shouldn't go there. If that area has been adversely impacted, as my hometown has been for over 12 decades, then it shouldn't go there. Because, what we should do, no project should do harm. If it adds to, or contributes to, or does harm or creates a threat that is deemed locally to be too great a risk, then it should go elsewhere. That's my opinion of it.

We're not going to stop it completely. Now when there's the day that comes and we can get the policy change and we can just say, "no and we ain't going to do it at all." That we can transition out of fossil fuels and that's why that is so important, that it won't become it won't be an issue in that fashion, then so be it, I'm all for it. But until that date, we need to have a say in this. Not just a say to be heard, but a say to be listened to. And not just respected, but also that if they don't want it, we're not gonna force it on them. Because we represent the people. We're elected by the people and we have to serve them. And we're not going to sacrifice them on the altar of big oil and gas profits. We're not going to sacrifice our health for their profits. And that's the way it should be, but it's not, so we've got to work to do that.

But those processes are not transparent. If you're going to fight that, you're going to have to lawyer up. You're gonna have to get people that have the expertise and the background at every phase of this thing to be able to get you in the game, so you can not just play, but fight and win. And that requires money. It requires the right expertise. And that also requires a community that knows that's what they need and willing to work for it. Some places don't know, so they rely on people from the outside, and that's why organizing is important.

But going back to that question once again. Those processes don't work to serve our good. They need to be changed. They need to be modified. They need to be updated to reflect the current reality of the places where these projects are going to go. And to respect the needs of the people there and they're concerns. Not to mitigate those concerns but to acknowledge them and say, "if you don't want it we're not coming."

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514 "all the entities with which the company has a business relationship, because these entities: (a) directly or indirectly provide products, including financial services, which contribute to the production of the company's products, or b) receive products, including financial services, from the company" (art. 2, 9°)

515 "'sustainable investment' means an investment in an economic activity that contributes to an environmental objective, as measured, for example, by key resource efficiency indicators on the use of energy, renewable energy, raw materials, water and land, on the production of waste, and GHG emissions, or on its impact on biodiversity and the circular economy, or an investment in an economic activity that contributes to a social objective, in particular an investment that contributes to tackling inequality or that fosters social cohesion, social integration and labour relations, or an investment in human capital or economically or socially disadvantaged communities, provided that such investments do not significantly harm any of those objectives and that the investee companies follow good governance practices, in particular with respect to sound management structures, employee relations, remuneration of staff and tax compliance." Art. 2, §17 https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:32019R2088&from=fr#d1e514-1-1

516 https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:32020R0852&from=EN These criteria shall consider both short- and long-term impact of a given economic activity on environmental objectives (art. 19, b), build upon Union methodologies for assessing environmental footprint (art. 19, d), take into account the life cycle understood as both the environmental impact of the economic activity itself and the environmental impact of the products and services provided by that economic activity, be certain the activity "does not lead to a lock-in of assets that undermine long-term environmental goals, considering the economic lifetime of those assets" and "has a substantial positive environmental impact, on the basis of life-cycle considerations" (art. 16 referred to in art. 19, h), take into account the potential market impact of the transition to a more sustainable economy, including the risk of certain assets becoming stranded as a result of such transition, as well as the risk of creating inconsistent incentives for investing sustainably (art. 19 i)

517 For a comprehensive analysis of the right to health: https://www.ohchr.org/sites/default/files/Documents/Publications/Factsheet31.pdf

518 "If the activities of the company or those of its subsidiaries actually cause or contribute to adverse consequences for human rights, international humanitarian law, labour rights or the environment, the company is, in any event, obliged to stop these activities insofar as these negative consequences cannot be prevented or stopped by other means. If the activities of associated companies or entities in the company's value chain actually cause or contribute to adverse human rights, international humanitarian law, labour rights or environmental consequences, the company is, in any event, required to terminate its participation in an associated company or its business relationship with a value chain entity in a responsible manner, if attempts to prevent and mitigate serious negative consequences are unsuccessful, if the negative consequences cannot be remedied, if there is no reasonable prospect of change or if the company or entity concerned does not take measures to prevent, mitigate and stop the negative consequences." (Art. 8, §5)

519 "persons and groups of persons whose rights or interests may be affected by a breach by the company of its duty of vigilance, as well as organisations defending human rights, international humanitarian law, labour rights or environment, including, but not limited to, workers, unions, local communities, children, end users of company goods or services, civic associations, civil society organisations and company shareholders" (art. 2, 10°)

520 Engie didn't comment on this in the opportunity to comment we sent to them.

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522 **Greenpeace Belgium**, Fluxys, l'entreprise gazière belge par excellence, en 10 chiffres-clé (2023) https://www.greenpeace.org/belgium/fr/blog/51612/fluxys-lentreprise-gaziere-belge-par-excellence-en-10-chiffres-cle/ In an opportunity to comment Fluxys specified "Fluxys investments are perfectly aligned with its strategy". They specify their 24% acquisition of Open Grid Europe (OGE) - the biggest gas operator in Germany (ndlr) - as well as their additional share in the Trans Adriatic Pipeline (TAP) are particularly strategic. Regarding OGE, Fluxys commented : "Fluxys and OGE are frontrunners in decarbonisation solutions and as such are actively developing hydrogen and CO2 infrastructure connecting into hydrogen import and CO2 export projects". Regarding the TAP, Fluxys commented : "TAP is pursuing opportunities to transport carbon neutral energy sources". The company concluded : "In 2022, Fluxys Belgium approved its indicative investment programme for the period 2023-2032. The programme as a whole encompasses investments totalling over €2.8 billion. The estimated investments in the development of the hydrogen and CO2 infrastructure, the reduction of our own greenhouse gas emissions and other investments in sustainable economic activities amount to around 75% of that total." Greenpeace is not analysing "estimated investments" which haven't been acted. We also can't fact-check a total percentage related to unspecified "sustainable economic activities". For the investments in gas infrastructure OGE and TAP and unforeseeable decarbonisation plans, we are referring to our box "Locking us in using trojan horses" as a reply to this justification.

523 **Bankwatch Network**, Southern Gas Corridor https://bankwatch.org/project/southern-gas-corridor-euro-caspian-mega-pipeline

524 **European Commission**, Upgrade of the Liquefied Natural Gas (LNG) Terminal in Revithoussa https://ec.europa.eu/competition/state_aid/cases/247194/247194_1517529_163_2.pdf and **Global Energy Monitor**, https://www.gem.wiki/Revithoussa_LNG_Terminal

525 **Dow Corporate**, Dow takes minority stake in consortium constructing LNG import terminal in Germany, diversifying European energy supply (2022) https://corporate.dow.com/en-us/news/press-releases/dow-takes-minority-stake-in-consortium-constructing-lng-import-t.html

526 **Hanseatic Energy Hub**, First ramming for new import terminal in Stade (2023) https://www.hanseatic-energy-hub.de/en/news/detail/erster-rammschlag-fuer-neues-importterminal-in-stade/

527 **De Tijd**, interview with Pascal De Buck (2022) https://www.tijd.be/ondernemen/chemie/geen-enkele-gasleiding-zal-overbodig-worden/10396700.html In an opportunity to comment Fluxys specified: "In the above-mentioned press articles Pascal De Buck stressed the need for infrastructure both in the phase-out period of natural gas, and, in the future, for transporting carbon-neutral molecules or CO2. As confirmed by different studies and market consultations, the demand in infrastructure for both hydrogen and CO2 is increasing rapidly. And the role of Fluxys is to ensure that this infrastructure is or will be available as solution for large-scale decarbonisation." We are referring to our box "Locking us in using trojan horses" as a reply to this justification.

528 Ibidem.

529 In an opportunity to comment, Fluxys said it differentiated between "nameplate capacity" and "technical capacity". The nameplate capacity (9 bcm/year) is the conversion into m^3 gas of the maximum number of slots it can offer to the market over a long term (110 slots, which could be increased due to planning optimisation). It confirmed the installed technical capacity is 541 GWh/d (22.5 GWh/h), which covers the 110 slots as well as its own operational needs, flexibility services and redundancy. It is this technical capacity, also used by the GIE database, that we have used in our calculations for the utilisation rate, leading to a 22% utilisation rate in 2021, and 61% in 2022 for the Zeebrugge LNG terminal.

530 **L'Echo** interview with Pascal De Buck (2022) https://www.lecho.be/entreprises/energie/pascal-de-buck-ceo-de-fluxys-la-crise-ukrainienne-a-montre-que-la-securite-d-approvisionnement-n-allait-pas-de-soi/10396656.html

531 **Fluxys**, TAP partnership press release (2023) https://www.fluxys.com/en/press-releases/fluxys-group/2023/230127_press_trans_atlantic_partnership and De Tijd, interview with Pascal De Buck (2022) https://www.tijd.be/ondernemen/chemie/geen-enkele-gasleiding-zal-overbodig-worden/10396700.html

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