

LNG: The U.S. and EU's Deal for Disaster

Following Russia's invasion of Ukraine, the European Union faces an energy crisis, leaving millions of residents in energy poverty and millions more in fear of coming winters.¹ A key part of the EU's solution calls for increased imports from the United States of liquefied "natural" gas, or LNG, totaling an extra 15 billion cubic meters in 2022 and 50 billion more annually until at least 2030.² A Food & Water Watch (FWW) analysis finds that this misguided EU policy could generate 400 million metric tons of carbon dioxide (CO₂) equivalent annually, cost over \$64 billion through 2025, and lock in fossil fuel infrastructure for decades. A better investment for the EU, the U.S., and our planet is a rapid transition to 100 percent renewable energy, avoiding significant fossil fuel emissions.

LNG: The Gas of the Future?

LNG is natural gas cooled to -260 degrees Fahrenheit to facilitate shipping and storage.³ The U.S. supply typically originates from hydraulic fracturing, or fracking, an extremely dangerous process that jeopardizes communities and the climate alike.⁴ After traveling through pipelines, the gas is liquefied near coastal export terminals for transport. These facilities endanger nearby communities, threatening pollution and deadly explosions.⁵ From there, ocean tankers carry the LNG to import terminals abroad for regasification and distribution.⁶ After the sabotage of two gigantic gas pipelines in the North Sea, infrastructure protection has been ramped up across Europe, with LNG terminals potentially vulnerable.⁷

LNG is composed primarily of methane, the second leading contributor to climate change after CO₂. Methane's global warming potential is over 85 times that of CO₂ over a 20-year period.⁸ This means that even small leaks during LNG production and transport can have massive consequences.

LNG Will Exacerbate Dangerous CO₂ and Methane Emissions

The U.S. is now the world's largest LNG exporter, with exports averaging 0.32 billion cubic meters per day in the first half of 2022.⁹ Europe is its perfect match, being the biggest importer of LNG globally.¹⁰ In the first five months of 2022, over 70 percent of U.S. LNG exports went to Europe.¹¹ If this pace continues, U.S. exports to Europe will triple the extra 15 billion cubic meter promise.¹²

At a time when we desperately need to be pulling back on fossil fuels and cutting emissions, additional LNG imports will not “contribute to the fight against climate change” as the European Commission has claimed.¹³ Natural gas has been falsely touted as a bridge fuel for too long,¹⁴ and our analysis shows that this agreement will not significantly cut emissions.

FWW finds that the lifecycle footprint of 50 billion cubic meters of LNG is nearly 400 million metric tons of CO₂-equivalent (using methane's 20-year global warming potential). If the U.S. delivered 50 billion cubic meters annually through 2029, this would amount to nearly 2.9 billion metric tons of CO₂-equivalent¹⁵ — equal to the emissions from over 621 million cars driven for one year. One year of emissions from 50 billion cubic meters of LNG would be equivalent to yearly emissions from 100 coal plants.¹⁶

Claiming LNG is better than Russian gas is dubious

Big Oil eagerly touts LNG as the climate-friendly alternative to Russian gas, but problems arise quickly, as a standard methane leakage rate from U.S.-sourced LNG has not been measured.¹⁷ Discerning methane emissions from LNG's lifecycle is difficult, as research has consistently underestimated reality and failed to appropriately study the problem.¹⁸ A report commissioned by the U.S. House of Representatives found that Big Oil knowingly misrepresents its emissions reporting to the U.S. Environmental Protection Agency (EPA) and that EPA methane figures underestimate emissions by 60 to 90 percent.¹⁹

These differences have major ramifications. For instance, consider the deal that French energy company Engie has made with NextDecade for 15 years of LNG.²⁰ NextDecade sources its gas from the Permian basin in the southwestern U.S., where estimates for fugitive methane emissions are far higher than the U.S. average.²¹ RMI estimates that, under a low leakage rate, emissions would be lower than for Russian gas. But under a high leakage assumption, Permian gas is worse by nearly 300 kilograms of CO₂-equivalent per barrel of oil equivalent — equal to over 300 pounds of coal.²² FWW's estimates are based on studies that use approximate methane leakage rates, one of the most impactful factors for emissions calculations, potentially undercounting the true impact of this agreement.²³

Infrastructure Buildouts Now Will Keep Us Trapped for Decades

On the U.S. side, there are seven large LNG export facilities capable of exporting 13.8 billion cubic feet per day by late 2022 when ongoing expansion is completed.²⁴ Research by the Institute for Energy Economics and Financial Analysis shows that, with one plant already under construction and coming online in 2025, the U.S. can meet its promises to Europe without building new infrastructure or signing new contracts.²⁵

Yet 24 projects are currently proposed, approved, or under consideration, as fossil fuel companies capitalize on a crisis to bury us deeper in debt to fossil fuels for years to come. According to the Environmental Integrity Project, the 24 LNG projects could emit over 90 million tons of CO₂ annually without even accounting for upstream or downstream emissions.²⁶

Looking to Europe exposes a similar pattern. There are 41 operating import facilities across the EU, with 7 under construction and another 26 planned.²⁷ Because onshore LNG terminals take several years to come online, Europe is also turning immediately to Floating Storage Regasification Units (FSRUs), with at least 20 planned.²⁸

FSRUs work with existing grid connection, but long-term contracts are needed to ensure steady supply.²⁹ This entrenches fossil fuels for decades to come, with countries desperate for a stopgap now signing onto 10-, 15-, or 20-year agreements.³⁰ FSRUs remain operational for over 20 years, while onshore import terminals last 40 years.³¹ If a terminal went into operation today, it could function until 2062 — far beyond what the planet can sustain. And because land-locked countries cannot directly receive LNG, the fossil gas industry is pushing buildouts of pipeline infrastructure to transport LNG inland, locking in even more fossil fuel infrastructure.³² This is in stark contrast with an announced decrease of 60 percent of EU final gas demand by 2030, as modeling under the REPowerEU plan forecasts.³³

While We Waste Money on Gas, Climate Goals Are Slipping Out of Reach

These decisions by the EU — imports, long-term contracts, FSRU leases, terminal and pipeline buildouts — will not come cheaply. FWW estimates that, under the average U.S. LNG export price from January 2016 to July 2022 (thus, largely before the energy crisis), the cost of the chilled gas (50 billion cubic meters) would be \$10.6 billion. Through 2025, that would cost over \$35 billion.³⁴

However, since the onset of the conflict in Ukraine, prices have skyrocketed, with LNG prices up 1,900 percent from two years ago.³⁵ Because so much LNG is locked in long-term contracts with Asian or Middle Eastern clients, Europe needs to outbid those contracts plus the cost of breaking them.³⁶ Maintaining the level of imports needed will require consistent outbidding.³⁷ Combine this with the lack of supply, and high prices are expected to remain for at least three years, and some anticipate even through 2027.³⁸

For this reason, we estimate that, based on the 2022 average for U.S. LNG exports, 50 billion cubic meters could cost \$19.6 billion for a mere 12.5 percent of overall EU gas demand. Through 2025 that could be over \$64 billion.³⁹ Since the agreement continues until 2030 and prices may remain volatile, the real price tag may be far higher. Some countries are turning to long-term contracts as a cheaper option.⁴⁰ Long-term contracts offer security, while also providing the opportunity for oil and gas companies, already raking in billions, to lock in profits for decades to come.⁴¹

Infrastructure is not cheap either. The REPowerEU plan suggests that additional investments of €10 billion in new gas infrastructure are needed to compensate for the loss of Russian gas, which would come on top of the €13 billion worth of gas priority projects announced last year.⁴² This would total €23 billion worth of fossil gas infrastructure with an EU priority label (equal to \$23 billion as of the October 2022 exchange rate).

Individual countries may invest more in their own infrastructure. Germany, for example, has passed a law to fast-track permitting and is building LNG terminals at eight times the normal speed.⁴³ Germany is looking to approve 11 terminals that would import until 2043, two years before the country's goal for achieving climate neutrality.⁴⁴ These plans already include five FSRUs, with 5- or 10-year contracts.⁴⁵ Germany has set aside €2.5 billion for four of these. Two permanent import terminals are also in planning, although the cost is unknown.⁴⁶

Claims that that terminals will be retrofitted for renewable energy sources once the immediate crisis ends are suspect, as the projects are backed by energy and utility companies looking primarily for profit.⁴⁷ Some of the German projects were opposed several years ago by local communities and environmental organizations, citing climate concerns and proximity to Wadden Sea National Park.⁴⁸ These concerns remain unaddressed.

Environmental Justice Must Remain at the Forefront

Such concerns are not without cause. The U.S. Department of Energy reports that LNG infrastructure leads to significant social and environmental harms, including the loss of food crops, decreased social and cultural cohesion, and increased vector-borne and communicable diseases. This is largely due to the potential for relocation or splintering of communities following large-scale projects such as LNG facilities.⁴⁹ In the U.S., communities have rallied against export facilities, as the destruction of natural habitats to pollute the air and our climate will never be in the public interest.⁵⁰

Continued fracking will also exacerbate existing harms to U.S. frontline communities. European countries have traditionally looked away from U.S. LNG in part because of its fracking origins.⁵¹ Now, Europe is eager to take this once-tainted LNG. But the dangers remain the same. Communities plagued by fracking experience well documented and severe environmental impacts, which fall disproportionately on frontline populations that include rural, lower-income communities and communities of color.⁵² Those living near fracking sites are at increased risk of contracting cancer and a host of other medical disorders,⁵³ with pregnant women and children at even greater risk.⁵⁴

Even after all of this, U.S. production will not dig Europe out of its energy crisis — gas executives have said as much. The U.S. industry is not increasing production any further, keeping supplies tight and prices high.⁵⁵ This will hit the European public hardest, particularly lower-income individuals who pay disproportionately more for heating.⁵⁶ Experts anticipate that food bank participation in the Netherlands will rise 15 percent in the coming months, as families are forced to choose between eating and heating their homes across the region — all while Big Oil profits.⁵⁷

This Money Must Be Put Toward Renewables Instead

These resources and money should be used to build out the renewable grid instead of wasting it on fossil fuel buy-outs. With the EU promising net zero greenhouse gas emissions by 2050 and a 40 percent increase in renewable energy production by 2040, this development is desperately needed. The United Nations has warned that European countries cannot increase their fossil fuel use and that the climate crisis is already upon us.⁵⁸

FWW finds that when looking at the 2022 average cost for LNG, the cost of renewables is far lower. For the price of 50 billion cubic meters, utility-scale solar power could provide over 540 million megawatt-hours (MWh), 11 percent more than LNG. Onshore wind power costs are similar, providing 515 million MWh. Scaling up renewables to this level would avoid over 500 million metric tons of fossil fuels, no matter if it is replaced with solar or wind.⁵⁹ The choice is clear.

Conclusion and Recommendations

We find that the EU's proposal for energy security serves oil and gas companies, not the European public. A rapid switch to domestic energy through renewables in both the EU and the U.S., coupled with energy efficiency and further reduction of demand, is the only way to truly establish energy security from external threats, whether it be war, climate disaster, or supply chain disruptions. It is also the only way to ensure that our planet remains livable and safe for future generations.

FWW recommends:

- Ending fossil fuel exports, including LNG;
- Stopping investment in new fossil fuel infrastructure, and instead investing in a rapid transition to 100 percent renewable energy; and
- Ending public subsidies for fossil fuels. Money should instead be diverted to electrification of the buildings and transportation sectors, including increased funding for public transportation.

Endnotes

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