FINAL REPORT

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McCloy Fellowship on Global Trends

U.S.–GERMAN LNG TRADE NOW AND BEYOND:

Transatlantic bonding in the crossroads of international energy trade and climate ambition

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TABLE OF CONTENTS

ABSTRACT

Natural gas has long been a steady, reliable, and less carbon-intensive energy source for industry and households in Europe, particularly in Germany. However, the Russian aggression against Ukraine has drastically changed the situation and the German perception on natural gas. Both the USA, where significant returns from LNG exports are relatively new, and Germany, which relied on stable supply security, are adjusting to this new reality.

This report compiles perspectives from meetings during a three-week study trip in the USA in early 2024, contextualizing and contrasting them with realities in Germany and Europe, as well as incorporating additional background information. Talks were held with the U.S. administration – executive and legislative branch – industry, environmental activists, as well as think tanks. Discussions with these stakeholders focused on their perspectives on U.S. natural gas, the production of liquefied natural gas (LNG), and trade with Germany/the European Union in the context of the energy crisis that was caused by the Russian unjustified aggression against Ukraine. The appendix provides statistical information in a set of diagrams supporting the lines of this report.

With the new U.S. administration of President Trump, U.S. politics will increasingly favor business-oriented energy and fossil-fuel policy instead of a climate-focused energy policy, in contrast to the previous U.S. administration of President Biden. This report ventures along the lines of the situation at the beginning of 2024, when interviews were conducted in the USA, and January 2025, when President Trump assumed office. It sketches perspectives describing a transatlantic and global trend that will continue to be relevant for both sides of the Atlantic in terms of dealing with present-day challenges and shaping the future, with a need to come to terms with using fossil fuels and their effects on climate change.

ABSTRACT

Political developments on the matter when on location in the USA made the focus of this McCloy Fellowship on Global Trends even more pertinent. Had the topic already been very crucial for Germany and for securing its gas supply in the previous two years, it became relevant for internal U.S. politics. During the trip, at the end of January, President Biden declared a moratorium on issuing permits for new LNG production facilities. Consequently, discussions with stakeholders mainly circled around this permitting issue and how the decision would influence LNG trade with Europe. While the moratorium was heavily debated in the LNG industry, Donald Trump later in the year campaigned on the three-word energy policy "Drill, baby, drill," promising a renewed focus on U.S. natural gas production, expanding LNG exports, and receiving respective revenues from abroad, as well as decreasing climate ambitions. He delivered on this campaign claim right from the start of his presidency on January 20th, 2025, lifting President Biden's moratorium and denouncing the Paris Climate Agreement. Increased industry libertarianism is going to push for advancing U.S. LNG facilities and further developing exports. Globally this might have a price-moderating effect, however, most probably only a few years from now.

While interviews were conducted in the USA, President Biden declared a moratorium on additional LNG export facilities, and President Trump later declared: "Drill, baby, drill"

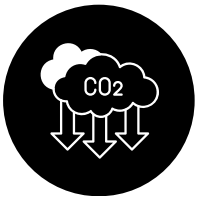
GUIDING QUESTIONS

To structure conversations with U.S. stakeholders during the fellowship trip in January 2024, the following guiding questions were raised during the interviews in the USA. Respective perspectives on these questions will be looked at in the course of this report:

No. 01 — U.S. Perspectives

What are the U.S. perspectives regarding the outlook for U.S. LNG

1. for U.S. geopolitical interests,
2. for U.S. commercial interests, and
3. in relation to U.S. efforts in the global fight against climate change?



No. 02 — Inflation Reduction Act

What is the outlook and potential impact of the Inflation Reduction Act (IRA) on carbon dioxide technology development such as carbon capture and storage (CCS) for "greening" U.S. LNG and which effects can this have in terms of transatlantic climate technology transfer?

No. 03 — Bridge Fuel Trajectory

Which trajectory does U.S. LNG have as a bridge fuel to economies, which are based on renewable electricity production and on hydrogen in Europe, possibly including the export of U.S. hydrogen or derivatives?

BACKGROUND INFORMATION

A new transatlantic trade partnership, born from crisis

Considering the lack of natural gas production in Germany and the EU, constant inflows of natural gas are fundamentally important for fueling German industry and keeping households warm. Germany needs to import 95 percent of all its natural gas demand and approximately 70 percent of its total energy demand (EU: approximately 60 percent). Consequently, the necessity of a stable natural gas supply is of geopolitical significance for Germany. In 2021 direct Russian gas imports into Germany still amounted to more than 50 percent of all imports (EU: more than 40 percent), which were in turn distributed to neighboring countries to a great extent. The situation turned grim when, in September 2022, Russian flows into Germany through Nord Stream I were cut entirely. Flow reductions and cuts already became apparent and were reduced to zero before the pipeline was sabotaged at the end of September 2022, which allowed some time to adapt to the new situation before the winter of 2022. However, gas prices skyrocketed, taking the German gas market and its companies to the brink of collapse; a serious risk of defaulting on gas supply to household customers was imminent. Although markets adapted to the new situation, because demand decreased significantly, gas prices today are still more than double compared to 2021 and thus they are a strain on industry and households.

All these events connected with Russia's unjustified aggression against Ukraine led Chancellor Scholz to declare the "Zeitenwende" (turning point in time) for German politics. With the stop of gas inflows from Russia, Germany's energy policy experienced a Zeitenwende, too. The need arose to quickly diversify German natural gas supply, banking on a functioning of the European integrated gas market, scaling up domestic and European renewable-energy production, and bringing about industrial and household energy savings, despite the cost to the economy. Since 2021, German gas imports have decreased by about 50 percent (EU: about 20 percent); missing volume resulted in a decrease in consumption and the loss of Germany as a natural gas transit country.

BACKGROUND INFORMATION

In 2022, the German government decided to respond to the impossibility of receiving natural gas from Russia with massive investments into infrastructure for importing LNG at the coasts of the German North and Baltic seas. For the first time this enabled Germany to directly receive globally traded LNG by the end of 2022, when the EU already satisfied about 15 percent of its natural gas imports with U.S. LNG. At the same time, the German government tried to forge new supply alliances worldwide to make best use of its new infrastructure. At the end, however, and up until now, nine out of 10 LNG cargoes to Germany have originated in the USA. The reason for that is that the USA had sufficient export facilities available to cater to new demand, and with its flexible contract regime, supply could be arranged on a short-term/spot basis. This is a major difference compared to other global LNG exporters, who may only agree to long-term delivery contracts – which traders just never required for satisfying German demand.

Global LNG trade almost doubled in the past 10 years. U.S. LNG exports grew approximately 26 percent overall and doubled to the EU and the United Kingdom between 2021 and 2024. However, because of the absence of German LNG import facilities, a U.S.-German gas partnership was not existent before 2023. After first deliveries trickled in at the end of December 2022, by 2024 the USA already supplied more than 90 percent (2023: 80 percent) of all LNG imports into Germany, whereas U.S. exports to Germany amounted to 5 percent. Overall, Europe receives around 50 percent (2023: around 60 percent) of its LNG imports from the USA. With the interconnected European network, substantial parts are imported into facilities in Belgium, the Netherlands, and also Great Britain, eventually reaching Germany. This makes German gas imports nowadays dependent on two types of gas sources: primarily Norwegian pipeline gas imports and directly or indirectly imported LNG. With increasing volumes of LNG imports into Europe, LNG trade flows advance to a proper European affair.

Whereas total U.S. LNG exports increased only slightly in 2024 compared with the previous year, decreased LNG flows from the USA to Europe were compensated for by the increase of LNG flows from the USA to Asia. Overall, the USA cemented its position as largest global LNG exporter in 2024, followed by Australia and Qatar.

BACKGROUND INFORMATION

Nowadays, U.S. LNG exports to Europe shape a trade relationship that is starting to get used as a political pawn in discussions on U.S. import tariffs. In the wake of the re-election of Donald Trump, European Commission President Ursula von der Leyen in November 2024 admitted that Russian gas and LNG imports into the EU (still at about 18 percent in 2024) could be replaced with U.S. LNG; the EU has set itself a deadline to phase out all Russian fossil-fuel imports by 2027. Friedrich Merz, German opposition leader and candidate for becoming Chancellor, repeated at the World Economic Forum in Davos the possibility of including LNG purchases from the USA as part of a deal.

In Germany, the demand for energy from natural gas has slightly increased in 2024 compared with the previous year. However, demand will probably only be brought down noticeably in the long term if and when the vision of the 20th German government of Chancellor Scholz for making available green molecules from renewable energies in the form of hydrogen or its derivatives is realized. However, despite the intense debate about the fossil-free future and despite the bad reputation of fossil fuels in mainstream politics in Germany, natural gas will most likely continue to play a role in Germany and in Europe as a bridge fuel, albeit a declining one, until well into the 2040s, when the goal of German and EU climate neutrality is supposed to be reached. A strong transatlantic LNG trade partnership might have a prominent role in facilitating this bridge.

In the context of increasing LNG deliveries, the discussion on how the goal of climate neutrality can be reconciled with the foreseeable demand for carbon dioxide (CO2)-intensive natural gas forms part of the transatlantic dialogue. From the perspective of the administration of President Biden, the future path of U.S. LNG was clear: Europeans were to import only CO2-free or significantly CO2-reduced (U.S.) LNG from the end of the 2020s onwards, in line with U.S. and European goals to reduce carbon dioxide emissions to curb climate change. If this aim would be brought to fruition, U.S. LNG could indeed be a bridge to a German and European economy largely run on green electrons and hydrogen molecules. This vision is supposed to become reality by the beginning of the 2040s. Thus, a German/European-U.S. trade relationship on LNG could become strategic and last for the next 20 years for its trade-related aspects and for its opportunities to develop carbon-neutral solutions in combination with natural gas.

HYPOTHESES

and characteristics of transatlantic energy cooperation

The underlying assumption for this transatlantic energy cooperation to continue is that Russia will not be a supplier of pipeline natural gas to Europe anymore. Otherwise, cheaper pipeline natural gas would again outweigh globally traded LNG, at least until the German and European energy supply could be completely covered by renewable energies and hydrogen on a competitive basis. One major concern that was often uttered in discussions, whether by the U.S. administration, Congress, or representatives of think tanks, is whether Germany would revert to procuring gas again directly from Russia in the distant future, suggesting that the decision on the moratorium on new LNG facilities would prove the USA to be an unreliable trading partner.

Concern is understandable when one sees that Russia continues to satisfy gas demand in the EU, including LNG. 18 percent of all gas imports into the EU originate in Russia. However, after Russian natural gas flows were stopped via the Ukraine pipeline network at the end of 2024, pipelines having been destroyed (Nord Stream pipelines) or closed (transit flows into Poland) and with increasing efforts to curb Russian LNG inflows on a European level, together with the political goal to phase out all Russian fossil-fuel imports into the EU by latest 2027, there is a fixed downward trajectory for Russian energy imports. Reopening these routes would take considerable political and technical efforts, rendering this option very unlikely.

PERSPECTIVES

Current and future perspectives on U.S. and German LNG trade

THE USA

Benefiting from global demand, taking advantage of technological developments to curb climate change, and considering geopolitics

INCREASE IN GLOBAL DEMAND

Besides the EU (2024: around 50 percent), Japan (7 percent) and South Korea (6 percent) are the main customers for U.S. LNG; China receives about 5 percent. With the increase in European LNG demand during the energy crisis (up 25 percent between 2024 and 2021, although 20 percent less demand in 2024 compared with 2023), and resurging post-COVID LNG demand in Asia, U.S. investments in its (export) natural gas industry are increasingly paying off and seem attractive for additional capacity developments.

There are 184 billion cubic meters (bcm) per year of LNG production capacity currently operational in the USA, mainly in Louisiana and Texas. In the further course of the 2020s, LNG expansion in the USA is projected to continue to be dynamic. The production between the years 2021 and 2035 is expected to total up to 420 bcm per year and summing up all LNG production facilities that have filed for approval sum up to around 580 bcm per year. Together with Canada, the North American region is thus going to be by far the world's largest producer of natural gas in 2035. With the realization of all currently foreseeable projects, the USA and Canada would be able to meet more than their own and European demand.

The steady increase in global LNG demand (up 8 percent between 2024 and 2021) cements the business case for the U.S. export infrastructure. The 2024 dip in European LNG demand, however, should be a warning that Europe will not be an LNG recipient indefinitely, as structural gas demand is going down. Most likely, U.S. capacity expansions are going to benefit Asian LNG buyers as a consequence. However, in the case of China this grows unlikely in light of discussions about imposing tariffs on trade. In any case, the energy crisis has shown that European customers in particular are willing to pay considerably more for U.S. LNG than those from the Asia-Pacific region when the market is tight.

CLIMATE CONSIDERATIONS

For the administration of President Biden, the increased demand for U.S. LNG was accompanied by the dilemma that its production releases considerable quantities of climate-harming methane, likely torpedoing global U.S. climate ambitions. The IRA tried to fix this with two industry-policy interwoven approaches: Encourage and challenge the gas industry by:

1. Successively increasing levies on methane emissions; providing the U.S. Environmental Protection Agency with funding for reducing methane in the gas sector, and
2. Funding the application of carbon dioxide technologies such as CCS via tax credits. In terms of industry and climate policy, the administration of President Biden had very high expectations for the development of these climate technologies in terms of their overall climate-change mitigation potential.

The IRA and U.S. climate diplomacy, which used to advocate for the introduction of certification standards for CO2-free or -reduced LNG by introducing a global governance framework for differentiated natural gas (lowering emissions along the natural gas/LNG production chain in the USA), combined with the introduction of regulations reducing methane emissions at the EU level, were paving the way for “greening” the transatlantic LNG partnership. The EU moving forward with its ambition to introduce LNG standards could still turn into a competitive advantage for the U.S. LNG within the next five to 10 years, assuming U.S. LNG can deliver on this ambition also compared with other global LNG producers. In the medium to long term, U.S. LNG will only have a chance with Germany and Europe if it has a significantly better carbon footprint itself and compared with LNG imports from other regions. A failure of the IRA's incentives in greening the U.S. gas industry and the current U.S. administration potentially not sharing the climate ambitions of the previous one might disservice U.S. LNG, because it could simply no longer be purchased in Europe for not adhering to import standards at some point in time.

THE USA

TECHNOLOGICAL DEVELOPMENTS

The U.S. climate ambition and national support programs such as the IRA could contribute significantly to the development of CCS technologies in the USA. This technology is going to be needed if Germany and the EU pull through on their 2045 and 2050 targets for climate neutrality. However, technological readiness is only going to be achieved in the next 10 to 15 years. Once ready, U.S. CCS technology could be in high demand in Germany and Europe for offsetting emissions that are very hard to abate. For U.S. CCS to become attractive, the U.S. gas industry ideally adopts this technology as a frontrunner and thus would differentiate itself compared to other higher-carbon LNG from the global market.

GEOPOLITICS

Despite climate considerations and decreasing European demand, a strong transatlantic natural gas partnership would make the USA less vulnerable if the geopolitical, systemic, and trade conflict with China should intensify, e.g., because of an escalation with Taiwan or tendencies of American-Chinese trade disputes. With cementing the bloc Russia/China vs. USA/EU, the U.S.-EU transatlantic relationship could be strengthened in favor or U.S. geopolitical interests, particularly because of increasing dependencies of and money flows from Germany/the EU.

Efforts to decrease the inflows of Russian energy imports into the EU are ongoing; however, energy carriers are still a source of revenue for the Russian government to fuel its war in Ukraine. Replacing Russian fuels with U.S. energy imports into the EU would weaken the Russian ability to wage war and could hopefully lead to an agreement with Ukraine at some point in time. Together with President Trump threatening to decrease the global oil price together with Arab allies in January 2025, rendering Russian oil production incompatible, transatlantic energy trade could contribute to curbing Russian war ambitions and influence.

GERMANY AND THE EU

Mastering the energy crisis and coming to terms with its aftermath, keeping in mind climate ambitions

At the latest since Russia's war of aggression against Ukraine from February 2022 onwards, it has been clear for Germany and Europe that their energy policies require a new momentum:

1. Finding a way out of the climate crisis,
2. Improving European energy security and lowering industrial dependence on fossil fuels, and
3. Means to fight galloping energy prices, rediscovering industrial competitiveness.

The transatlantic LNG partnership was a significant factor for mastering gas supply in a tight market at the height of the energy crisis in Germany and the EU. Also because of receiving U.S. LNG, Germany and the EU (among other measures) were ultimately able to:

- Break free from the grip of Russian energy dependence,
- Secure U.S. LNG as as a pragmatic and procurement-flexible energy bridge with a view towards a future economy based on renewables and hydrogen.

In 2022, Germany became particularly aware that there is still a long way to go to master full renewable energy coverage. Efforts to expand renewable energies were not able to contribute to overcoming the crisis in the short term; however, wind energy capacity expansion was very notable in the past three years. On the contrary, during the energy crisis, the use of coal and nuclear power had to be ramped up and their energy production extended, natural gas had to be requested from third parties (e.g., Qatar), and cherished approval processes for setting up LNG infrastructure had to be abandoned, e.g., specifically in the area of environmental impact assessments to accelerate the much-needed LNG infrastructure development.

GERMANY AND THE EU

Germany and Europe have exhibited a lot of pragmatism in tackling the energy crisis from 2022 onwards. Politics needed to find a way to maneuver the realities of this crisis as well as its ambitions and vision for an economy based on renewable energy sources and thus curbing climate change. The EU Commission, which started its new term in December 2024, has put competitiveness on the top of their agenda, and a new German government will have to fight economic recession and a continuous economic downturn.

German and European demand for natural gas is ultimately based on the ability of their economies to adapt to the requirements of curbing climate change, which is a major political motive. In a likely scenario where natural gas demand in Germany remains constant and renewable molecules cannot adequately compensate demand, coupled with prospective decreases of Norwegian pipeline inflows, it can be well assumed that the USA will remain the largest European gas/LNG suppliers until well into the 2030s.

THREE ASPECTS OF TRANSATLANTIC LNG TRADE

The perspectives gathered during the interviews in the USA on U.S. LNG production and transatlantic LNG trade may be described as follows:

No. 01 — Politics

Politics is a decisive factor for shaping the evolution of natural gas demand and supply and was particularly influenced by geopolitics during the administration of President Biden and the government of German Chancellor Scholz, up until the beginning of 2025. With the assumption of President Biden and a new German government around the corner, less climate-oriented policies and increasingly favoring fossil fuels will be immanent.

THREE ASPECTS OF TRANSATLANTIC LNG TRADE

No. 02 — U.S. natural gas / LNG business

The USA sits on an enormous volume of natural gas reserves and resources. Assuming the USA would continue its gas consumption as it is and assuming all U.S. LNG facilities would be built as planned and work at full capacity for exporting LNG, this would result in 50 years of reach of the U.S. natural gas resources. Further leeway is probably going to be created as the projections of resources have regularly increased in the past years.

Meetings with industry stakeholders in the USA were marked by a strong sentiment of pride for their industry and confidence for its perseverance – "U.S. natural gas has been available in the past and will be even more so in the future" was a phrase that was commonly heard. With increasing demand in Europe and returning Asian demand, 2024 marked a high cycle time for LNG and fossil-fuel exports, which resulted in a renewed focus on LNG export infrastructure buildout.

No. 03 — Environmental and cultural concerns in the USA

As burning fuels and natural gas without reducing their carbon impact for another 50 years is simply no option for curbing climate change, proceeds from natural gas and its sales abroad increasingly need to be used to further curb carbon emissions in the natural gas production chain and to be invested in the energy transition, as even one conservative interviewee put it.

One of the very first, very impressive and emotional meetings in New Orleans took place with an environmental advocate from the coastal Brazoria County, south of Houston, Texas, where she lives near the city of Freeport. Freeport is home to a large petrochemical agglomeration, including the Freeport LNG production and export facility, which throughout the past years witnessed export stops due to wrecked facilities. These export stops were at the time also monitored in Germany, as they contributed to a tightening of the global LNG market together with other factors. Firsthand experiences from living in industry-heavy U.S. zones provided valuable perspectives on complaints and narratives that weren't heard too often from other counterparts. They are, however, even more significant, as they affect the lives of residents directly and shed a light on American societal realities. These local experiences lead a growing group of environmental activists to campaign against those industrial, and particularly those LNG production, facilities.

THREE ASPECTS OF TRANSATLANTIC LNG TRADE

No. 01 — Politics

President Biden introduced a moratorium on new permits for yet-to-be-built LNG production facilities

The impact of politics on U.S. LNG production manifested on January 26th, 2024, when President Biden announced that the U.S. Department of Energy (DoE) would temporarily not issue any new permits for new LNG export projects. The analyses in use at that time dated about five years back, to the early days of U.S. LNG trade. The decision extended to projects with offtake agreements with countries with which the USA has no free trade agreement and which are therefore not in the U.S national interest per se. The moratorium affected projects with an export capacity of about 100 billion cubic meters of LNG that hadn't yet received approval from the regulatory authority FERC (Federal Energy Regulatory Commission) or the DoE to start their operations and export LNG.

The previous licensing practice of "simply waving through" was intended to be revised to do justice to the USA assuming the position as the world's largest gas exporter from 2023 onwards. Consequently, DoE was asked to revise its analytical basis, considering impacts on the U.S. economy, on the environment/climate, and on the U.S. national security interest. The U.S. administration repeatedly emphasized that the decision was in no way intended to jeopardize the security of energy supply of its allies and that exports to Europe would continue. The decision would entail an exception for "emergencies" and new licenses could be granted despite the moratorium in specific circumstances. In December 2024, the DoE released the announced analysis on the matter, which will likely not have any major impact for shaping policies of the administration of President Trump. Already during his Inauguration speech on January 20th, 2025, President Trump announced that revenue creation based on fossil-fuel exports would be high on the agenda.

Discussions at the time of the announcement of the moratorium showed a divide in the perception on the matter. The moratorium caused a controversy on the Hill. On the one hand, Republicans were against any restrictions of gas exports. They shared the industry's narrative of (relatively) environmentally friendly U.S. LNG to be exported in the long term.

THREE ASPECTS OF TRANSATLANTIC LNG TRADE

No. 01 — Politics

The certainty was shared that an administration led by President Trump would revise the decision soon after its inception (in addition to a significantly stripping DoE of its powers). Stakeholders claimed that there was no rational basis for the moratorium, but that the decision was a purely political one and not reflecting the public interest. The government should continue to let the market decide on stepping up production capacities. Furthermore, there was a strong belief that particularly exports to geopolitical allies shouldn't be subject to any restrictions. Hardly any perspectives on a post-LNG world, driven by electricity and hydrogen, could be heard – simply because this fossil-free world wasn't around the corner.

On the other hand, the attitude amongst Democrats was not as straightforward as expected. The breaking line ran between ambitious environmental and climate measures on the one side and potentially negative effects on the relationship with U.S. allies and their energy supply, which they would need to withstand Russian influence, U.S. economic interests, and the general divided perspective on the level of political influence on industry on the other side.

Both the House of Representatives and the Senate scheduled hearings during the weeks following the decision. The initial aim to "make noise," as part of the election campaign, was countered by Republicans examining legal actions against the moratorium, which eventually didn't lead anywhere.

Overall, three motives could be identified for introducing the moratorium:

1. The election campaign: The measure seemed primarily designed to win the votes of a young and left-wing group of voters (as well as their social media representatives) for President Biden who otherwise might not vote at all.
2. Economic policy: Shaping economic policy to prevent an overheating of U.S. LNG production that is still quite bullish, because of the spread between Henry Hub and trading hubs in Europe or Asia, and which otherwise seem to be limitless due to a high global demand now and in the future.
3. Climate policy: Reflection on the role of the USA as the largest exporter of natural gas/LNG, oil, and coal vis-à-vis the U.S. commitments to combat climate change.

A protectionist policy for restricting global supply and consequently keeping prices up, which would be specifically beneficial to projects already in existence, was not amongst the motives, which were named when speculating on the decision.

THREE ASPECTS OF TRANSATLANTIC LNG TRADE

No. 01 — Politics

Germany trying to define its reaction to the LNG export moratorium

What the decision really meant for European and global gas supply had been debated widely by industry analysts and the press. Whereas there hadn't been any immediate reactions on spot or forward markets, considering the large capacities of projects that would be coming online in the coming years, the decision had largely been downplayed. As it was still unclear when and to what extent new export projects from the USA would be approved again, a longer-term freeze on approvals could well have a negative impact on price trends in the 2030s at the earliest.

In any case, the reaction of the German government was mixed rather than straightforward. Whereas the German-American State Secretary of the German Foreign Office, Jennifer Morgan, publicly applauded the decision on Twitter/X, Chancellor Scholz signaled cautiousness based on German LNG import dependency when meeting with industry representatives during his trip to Washington, DC, in early February 2024. Overall, the situation was tricky for the German government to digest – whereas motives outlined above were rather U.S.-internal politics and election matters, a German stance could have been interpreted as infringing German neutrality vis-a-vis the presidential campaigners.

Wolfgang Ischinger, former Ambassador to the USA, described transatlantic energy trade "as important as never before." He continued: "transatlantic cooperation in energy supply security should not become a bone of contention, but rather an integral part of the transatlantic success story in the coming decade" – on the one hand criticizing the decision of the administration of President Biden to halt licensing new U.S. LNG production facilities, and on the other hand describing transatlantic LNG trade as a new venue for cooperation.

At the same time, U.S. stakeholders were very aware of Germany's need for gas in its energy mix, cherishing its ability to pay premium prices for its LNG supply, its plans to further scale up its LNG import capacities – also as a sign of willingness to break away from Russian energy imports – and planning with a rather large gas (and hydrogen-ready) power plant fleet for transitioning into a carbon-reduced and carbon-free economy.

THREE ASPECTS OF TRANSATLANTIC LNG TRADE

No. 01 — Politics

It is noticeable that the industrial decrease of natural gas demand due to high energy prices in the height of the energy crisis particularly in 2022 in Germany has not and probably is not going to return. At the same time, the impact of the increasing share of U.S. LNG imports in overall imports has yet to be fully realized. Parts of the reason for this negligence of increasingly relying on one trading partner could be that global LNG trade might be flexibly shifted to other trading partners and that Norwegian pipeline inflows into northern Europe remain reliably high at the current point in time.

Economic challenges, particularly with low economic performance rates in Germany and other European countries, prevail. Consequently, the European Commission, which started its new term in December 2024, has set out to improve the competitiveness of European industry. The understanding that industrial processes can't rely on renewable electricity production alone but also require molecules lead many countries and particularly Germany to develop and upscale its ambitions for setting up a hydrogen economy with a core hydrogen infrastructure being able to transport available hydrogen from the early 2030s onwards. Until carbon-free hydrogen is sufficiently and competitively available, Germany still must come to terms on how it is going to use natural gas in the transitioning period, but also how to organize the phaseout. Perspectives on ridding the gas molecules of emissions have yet to become concrete, whereas the European emissions trading system could render natural gas increasingly uneconomical in the foreseeable future, and further strain German and European competitiveness.

Beyond the 2030s and probably only by the 2040s, a system based on green molecules, respectively low-carbon hydrogen and its derivatives, is expected to accompany a renewable-based electricity system. By then natural gas will need to be phased out completely if the carbon neutrality targets ought to be reached by the middle to the end of the 2040s. Politics needs to increasingly incentivize this process and continue to create momentum.

THREE ASPECTS OF TRANSATLANTIC LNG TRADE

No. 02 — U.S. natural gas / LNG business

From traditional business to new opportunities

U.S. LNG production has been going strong in the recent years, with globally skyrocketing LNG prices driven by the large European demand and oftentimes accompanied by technical outages in larger production facilities, e.g., Freeport LNG, strikes in Australia, or blocked waterways such as the Suez Canal.

The global shortage of LNG became apparent during these times, reflected in prices. However, in the medium to long term, more LNG production facilities could lead to a deterioration of prices, which could be a downturn for present-day infrastructure investments.

Three notions on recent facility developments became apparent. First, so called "LNG cowboys" are successfully setting up LNG production facilities in the USA with little prior industry experience, but with great verve and sometimes aggressive methods. Second, traders along the natural gas/LNG value chain profit on the spread between the prices of natural gas at the U.S. Henry Hub index and the offtake prices in northern Europe. U.S. upstream gas producers are often bothered by only profiting from the Henry Hub prices but not reaching the margins, which traders reap after the production stage when selling LNG to Europe or globally. Therefore, producers contemplate how to take advantage and close the return gap between production and the offtake price. Third, the traditional natural gas production business seems to be settled in such a way that its executives describe their efforts in growing their business rather as a pastime – developing new business opportunities but coming from a position of a well-performing business.

THREE ASPECTS OF TRANSATLANTIC LNG TRADE

No. 02 — U.S. natural gas / LNG business

USA ramping up capacities

Starting exports in 2016 only, many LNG production facilities were built in a very short time, because they used a small and modular design. Considering the number and capacity of facilities that are under construction is enormous. Based on the approvals granted to date, the U.S. administration assumes that U.S. export capacities will increase by 141 billion cubic meters (bcm) from the current 184 bcm in the next years. In addition, export projects with a capacity of 185 bcm are at the starting block, which have already been approved but are not yet under construction, mostly due to missing financial investment decisions (FIDs). Projects with a capacity of 68 bcm have not yet received approval to start their operations and export natural gas from the regulatory authority FERC or the DoE. Depending on the market development and the operationalization of projects that are currently being constructed, it could be very possible that the higher the installed capacity, the harder it will get to reach FID. However, amongst those not yet having received approval are companies that have managed within a very short time to reach FID, build, and start the production facility, as well as securing considerable amounts of offtakes for their projects, with some of it also destined for Germany.

While the U.S. administration was making every effort not to portray the moratorium on to-be-approved LNG facilities as a permanent ban on approvals, the U.S. gas industry was up in arms about the announcement. It feared that the decision marked the start of a fundamental reorientation of the U.S. administration at that time regarding fossil energy production in the USA. Nonetheless, the firm belief remained that central interventionist economic policies don't prevail in the natural gas industry, as reaping returns from the relatively new and abundant U.S. natural gas sources are simply too high than disregarding them at this high cycle time (at least this was the shared understanding). The measure was discussed very emotionally among the industry representatives concerned. The moratorium would be "bad for the USA, bad for its allies, and bad for the world." The narrative of "clean, abundant, safe, and cheap" U.S. natural gas and LNG was followed very strongly: "being good for the U.S. economy, good for energy security in Europe, and good for the global climate," particularly regarding the carbon footprint in Asia as U.S. LNG would replace more emissions-intensive coal in electricity production. The industry called on Germany to campaign against the moratorium and for the continuation of granting export licenses: "This administration doesn't care much about companies, but it cares about you."

THREE ASPECTS OF TRANSATLANTIC LNG TRADE

No. 03 — Environmental and cultural concerns in the USA

Environmental activists claim that an explosion at the Freeport LNG facility in mid-2022 was caused by management negligence, resulting in a fire that released substantial amounts of emissions that were harmful for the immediate environment. Reports record a series of other environmental accidents that were attributed to the lack of trained staff at the facility, which was interconnected with a general lack of labor, alarm fatigue, and failing emergency plans. The lack of county or federal oversight, particularly from the Federal Energy Regulatory Commission (FERC) and the Pipeline and the Hazardous Materials Safety Administration (PHSMA) of the U.S. Department of Transportation, would contribute to the kind of described accidents. Furthermore, the industry-friendly state of Texas and county government would prioritize industrial expansion over the well-being of residents. Total tax cuts for the setup of new industrial facilities would add to a deterioration of the surrounding areas and were seen as unjustified, particularly if conditions such as the creation of new jobs (for residents) wouldn't materialize.

The American Lung Association (ALA) indeed reports for Brazoria County an "F" rating, which indicates failing air quality. This rating is assigned to a location with dangerously high levels of air pollution. Air quality with an "F" rating poses significant health risks, particularly for vulnerable populations such as children, the elderly, and people with pre-existing respiratory or cardiovascular conditions. With about 60 percent people of color living in Brazoria County, the ALA reports that they are more likely to be exposed to air pollution and are more likely to suffer harm to their health from air pollution than white people. A strong correlation also exists between risks from air pollution and people experiencing poverty. This accounts for about 10 percent of the population of Brazoria County (11.1 percent U.S. average for 2022). However, disease rates from the ALA for chronic obstructive pulmonary disease (COPD) accounting for 4.2 percent (4.6 percent U.S. average), deaths related to cardiovascular disease 0.18 percent (0.21 percent), and lung cancer 0.04 percent (0.05 percent) for Brazoria County, fall behind national averages.

THREE ASPECTS OF TRANSATLANTIC LNG TRADE

No. 03 — Environmental and cultural concerns in the USA

There are several reports of environmental activists complaining about human rights violations due to massive environmental pollution at so-called sacrifice or front-line communities in the vicinity of many LNG production sites on the U.S. Gulf Coast. Beyond lower rates of access to health care and legal representation of residents in these communities, a perception of neglect has manifested of on the one hand suffering from the effects of industrial production in those areas, and on the other hand not sufficiently benefiting from the proceeds of this industrial production. However, these perspectives don't seem to be anti-industry per se but rather bear witness to an industrial boom, asking for a participatory balance.

The situation in those industrial areas on the U.S. East Coast has also caught the attention of German parliamentarians who have visited the USA and affected communities on the matter of LNG production and exports in the past years. They criticize the prevailing environmental racism, missing diligence of respective companies, and the perception of U.S. LNG originating from fracked natural gas as being generally harmful. n September 2024, a joint letter was sent by 100 likeminded parliamentarians from several European countries to President Biden to encourage him to stay committed to the moratorium on LNG export projects. The letter is seen as a signal against the delusion of fracking, as methane leaks along the LNG production chain would cancel out the alleged climate benefits of U.S. fracked gas against other fossil fuels.

In 2023, the German Act on Corporate Due Diligence Obligations in Supply Chains (LkSG) came into effect. The LkSG imposes due-diligence obligations on large companies in Germany to ensure that their supply chains don't involve human rights violations or environmental harm. Not only are companies required to identify, assess, and address related risks in their supply chains, but also people worldwide are able to file complaints on the potential violation with German authorities. German companies importing LNG from respective U.S. LNG facilities would need to answer raised complaints too.

THREE ASPECTS OF TRANSATLANTIC LNG TRADE

No. 03 — Environmental and cultural concerns in the USA

When confronting industry representatives with respective environmental criticism, very little understanding was voiced. Replies would mostly entail starting a debate on the advantages of natural gas having less carbon dioxide emissions than other fossil fuels. Producing LNG would contribute to local industrial growth, including jobs for residents. Little willingness was shown to dive deeper into the claims of residents and activists.

All in all, the allegations from environmental campaigners and residents need to be seen in the context of many decades of structural challenges impacting residents and nature by local oil, petrochemical, and other industries. In some cases, the benefits of industrial production are not sufficiently reaped by residents, with the primary focus instead on tax breaks for industry. This contributes to the feeling of being left behind. A deeply rooted mistrust against local, state, and federal institutions can be seen, because it allegedly sides with industrial rather than with public interests. Overall, LNG production seems to be merely another drop in a barrel, which is already quite brimming with structural injustice, albeit a recent one. Furthermore, there is a divide between residents, activists, and industry with little exchange happening between them or efforts to acknowledge each other's perspectives.

APPENDIX

Figures about global and transatlantic LNG trade

Fig. 01 — **German energy import dependency, 2023**
(million tons of coal equivalent)

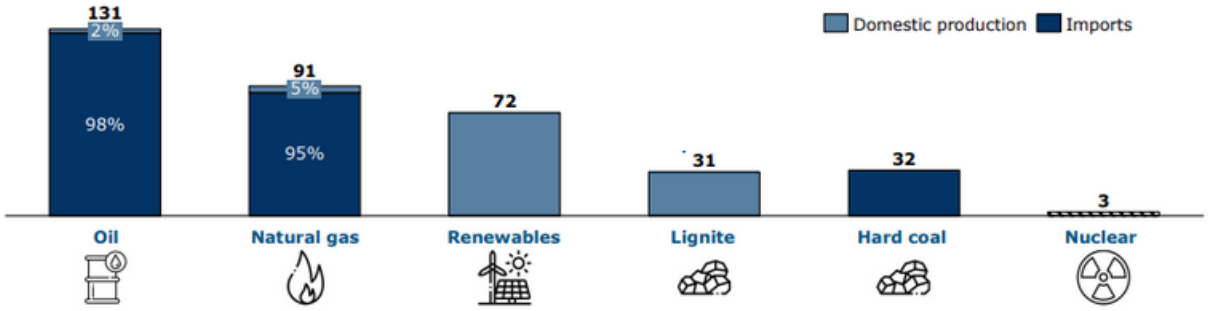
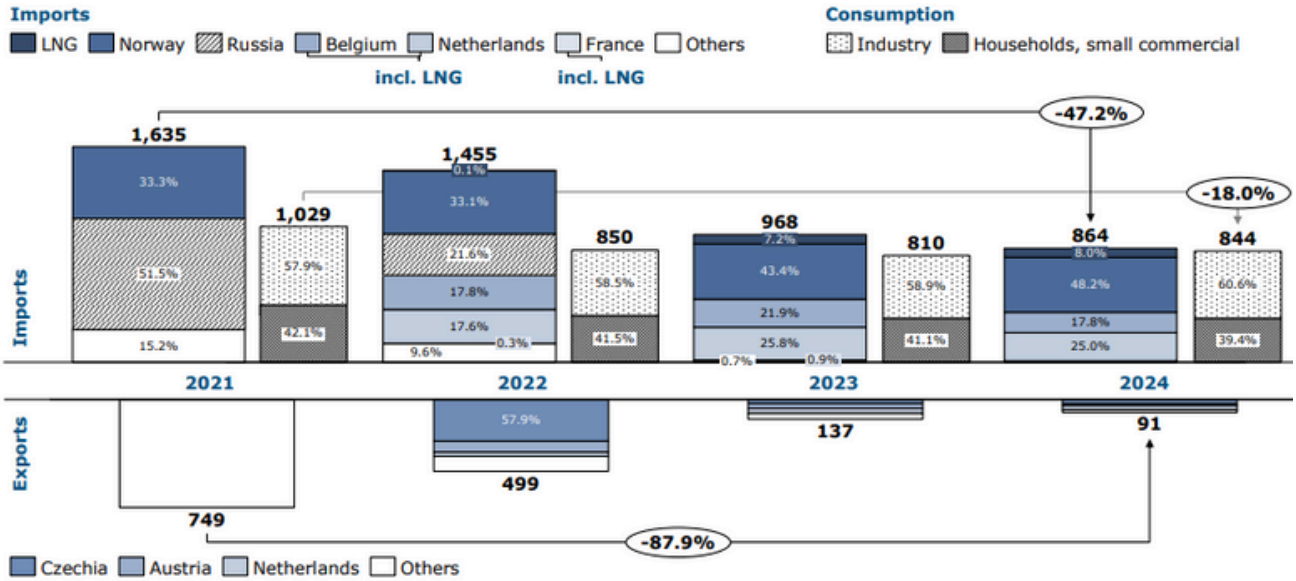


Fig. 02 — **German natural gas imports and exports, 2021-2024**
(Terawatt hours, TWh)



Not depicted: Flows into storages and national production (insignificant).

APPENDIX

Fig. 03 — **LNG imports into Germany, 2022-2025**
(million cubic meter of LNG)

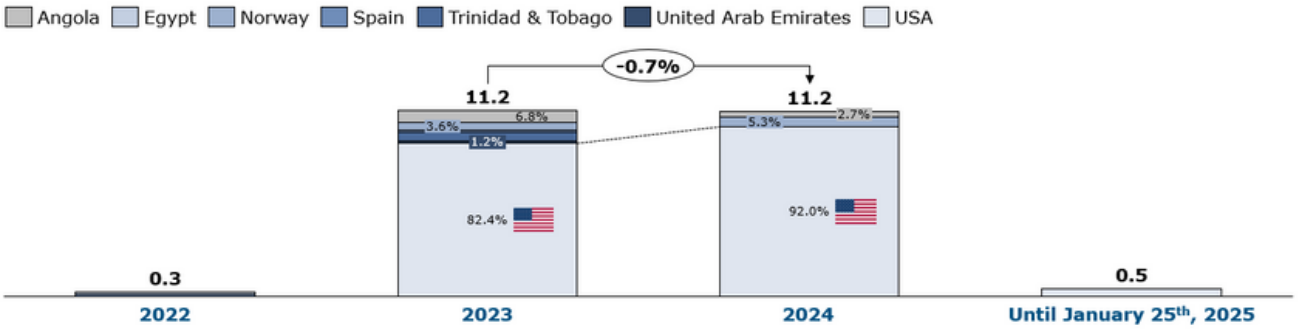


Fig. 04 — **Natural gas imports into the EU, 2021-2024**
(Terawatt hours, TWh)

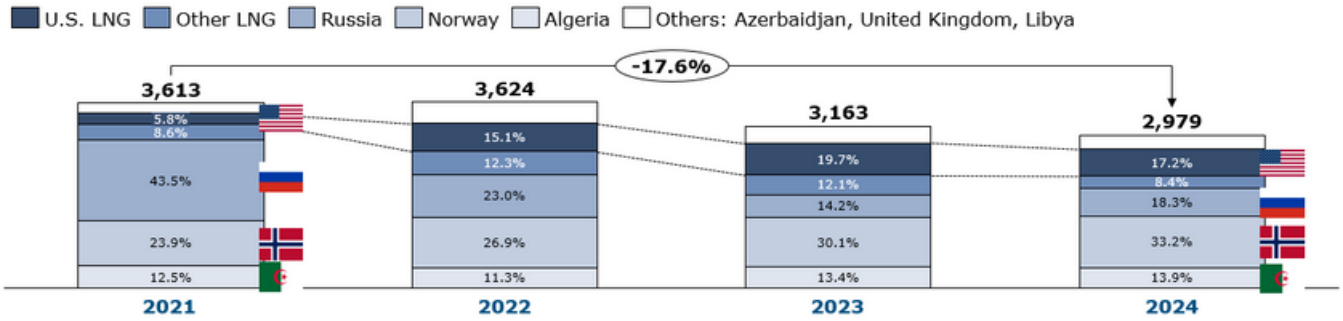
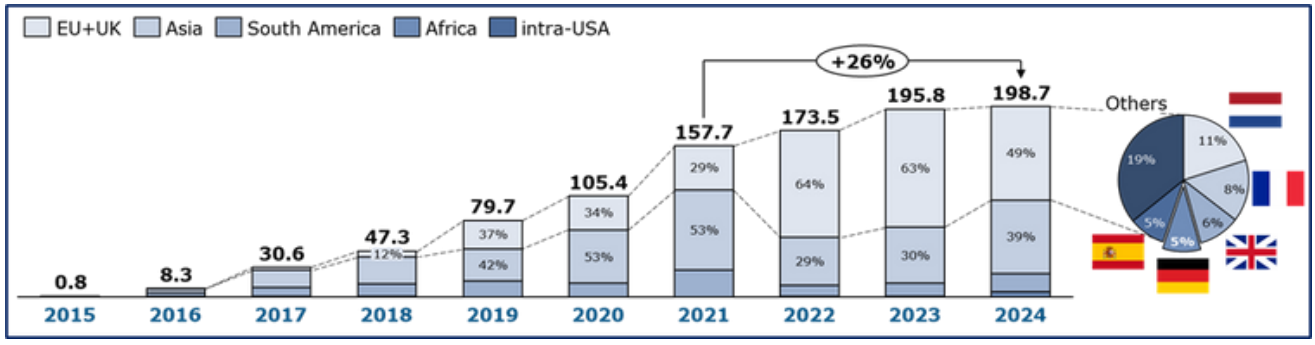


Fig. 05 — **Global U.S. LNG exports, 2015-2024**
(million cubic meter of LNG)



APPENDIX

Fig. 06 — **Global LNG exports, 2015-2024**
(million cubic meter of LNG)

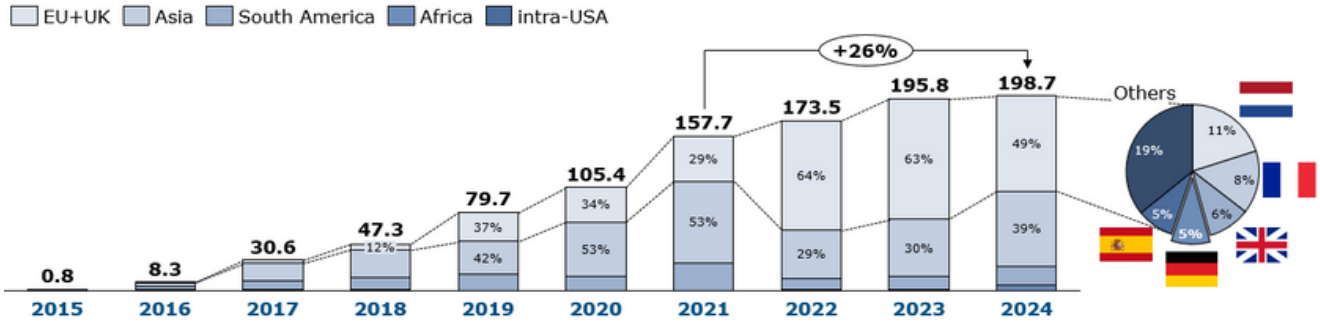
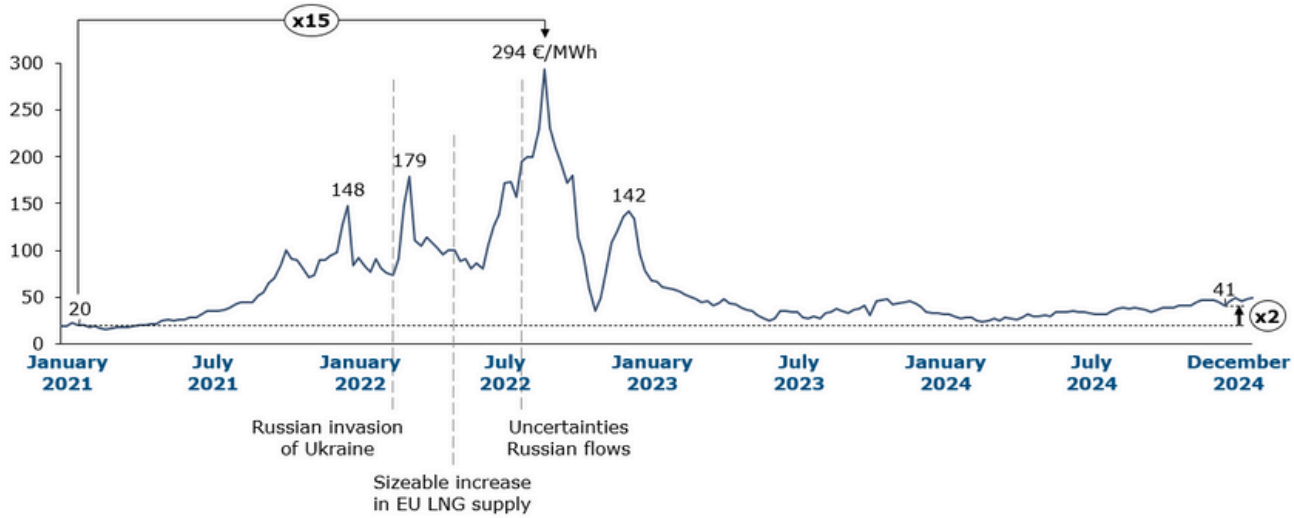
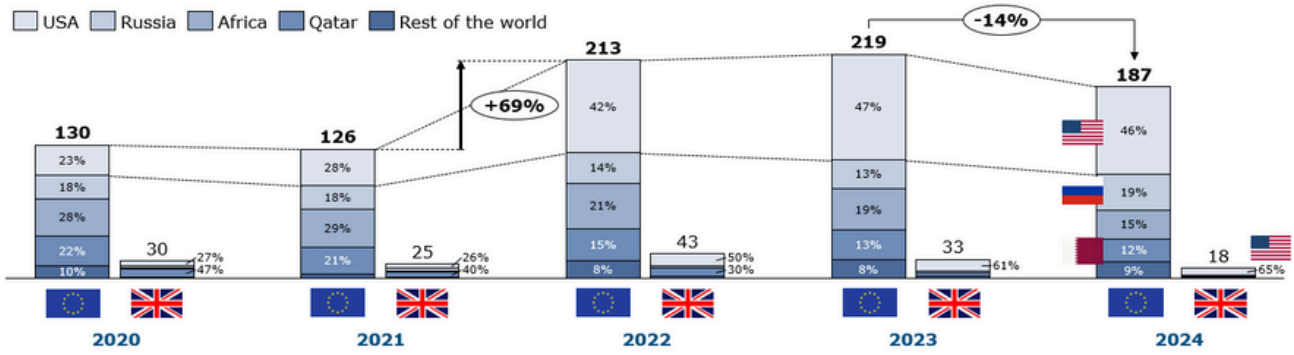


Fig. 07 — **Natural gas price developments in North-Western Europe, 2021-2024** (€/Megawatt hours, MWh)



Heren TTF Day-Ahead Index, Weighted Average, Daily

Fig. 08 — **LNG imports into the EU and the United Kingdom, 2020-2024**
(million cubic meter of LNG)



APPENDIX

Fig. 09 — **U.S. LNG production facilities**
(billion cubic meters of natural gas per year)

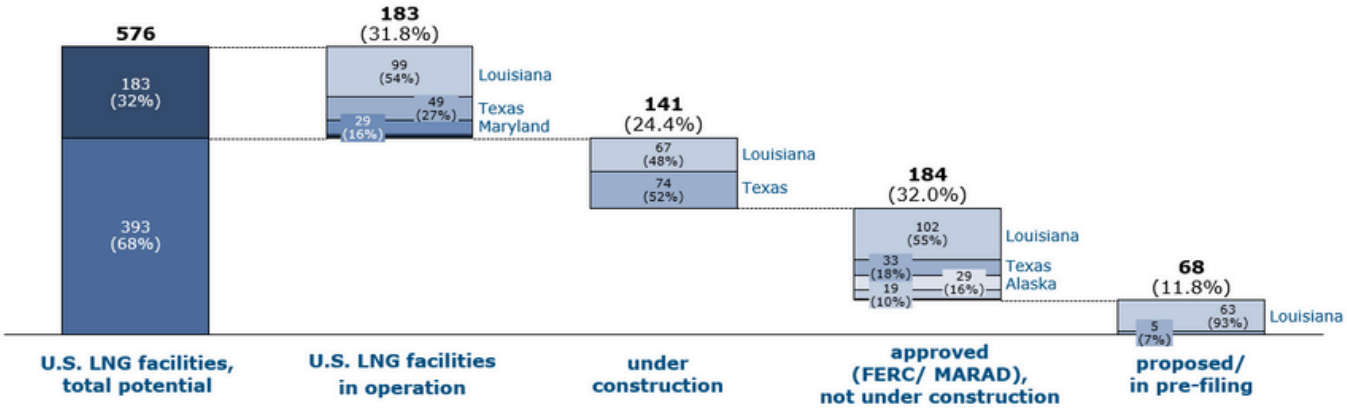
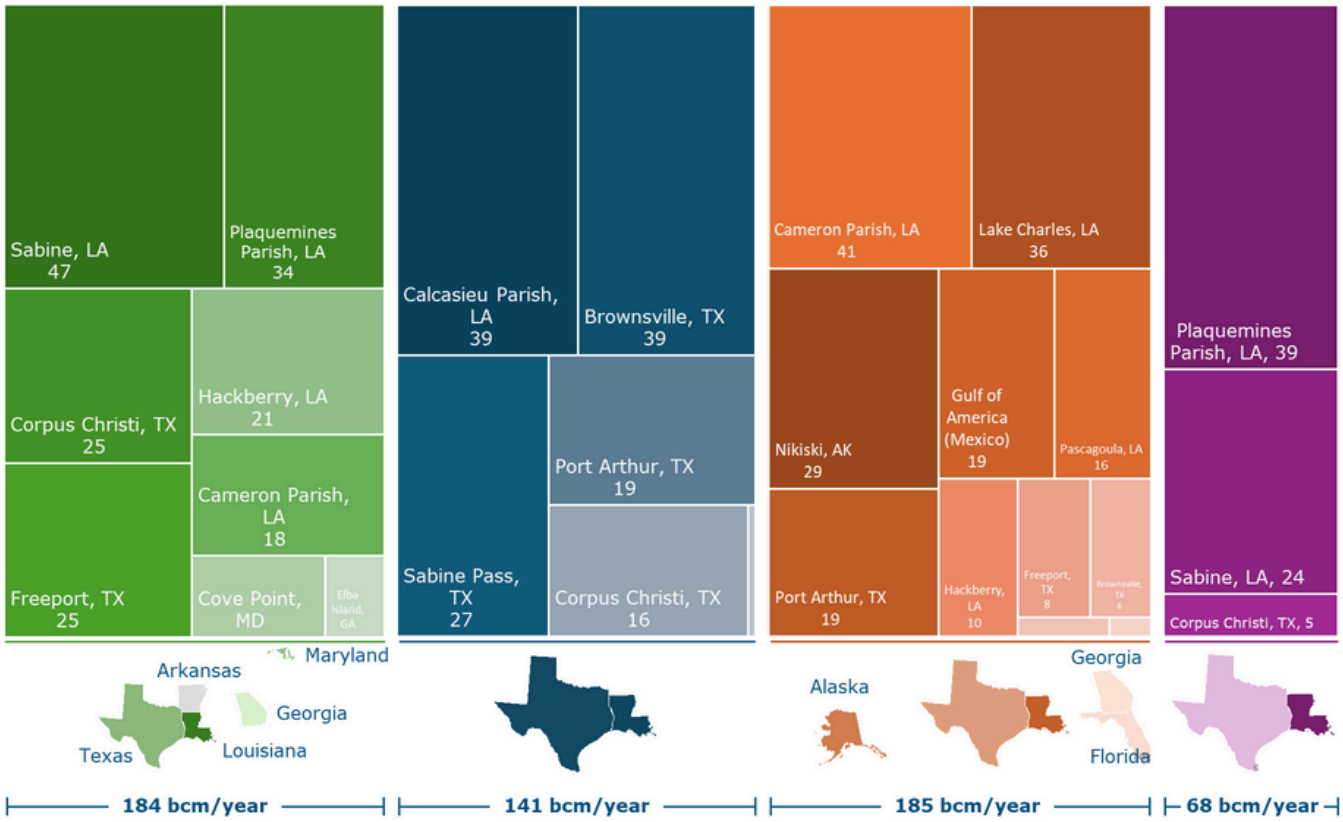
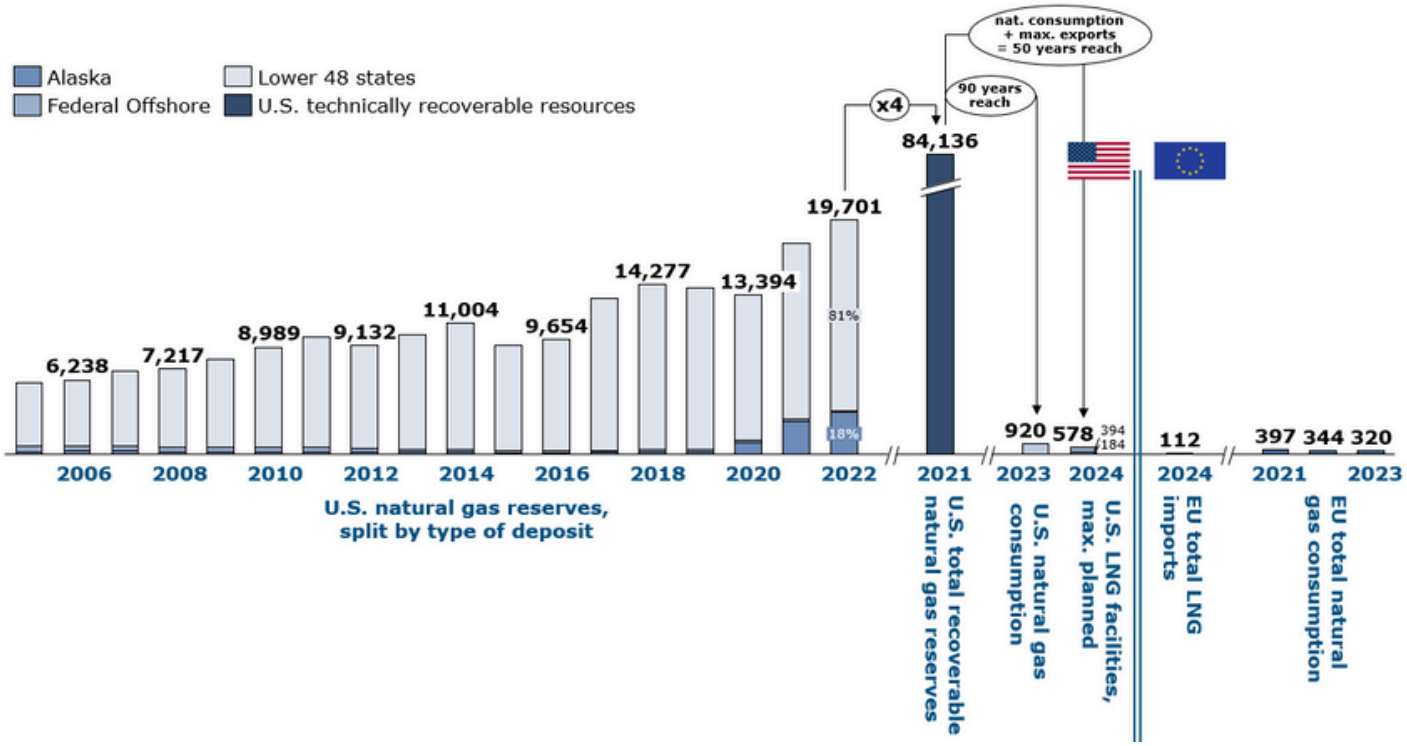


Fig. 10 — **U.S. LNG production facilities and their location**
(billion cubic meters of natural gas per year)



APPENDIX

Fig. 11 — **Comparison between U.S. natural gas reserves, resources, consumption and EU consumption of LNG and natural gas**
(billion cubic meters of natural gas per year)



SUMMARY AND OUTLOOK

U.S.-German LNG Trade Now and Beyond: Transatlantic Bonding in the Crossroads of International Energy Trade and Climate Ambition

Exactly one year after conducting the fellowship interviews in the USA and one year after the moratorium of President Biden on new U.S. LNG facilities, political sentiment has turned.

SUMMARY AND OUTLOOK

Exactly one year after conducting the fellowship interviews in the USA and one year after the moratorium of President Biden on new U.S. LNG facilities, political sentiment has turned. A renewed focus by the new U.S. administration on the production of natural gas and LNG is going to influence the U.S. and global natural gas and LNG markets. At the same time European politicians now combine this notion and the threat of tariffs on European imports into the USA with the possibility of increasing purchasing of U.S. LNG.

U.S. LNG contributes significantly to ridding Germany and Europe of the dependence on Russian pipeline gas at the moment. With still significant Russian imports covering European natural gas demand, plans of the EU to phase out Russian fossil-fuel imports altogether and President Trump trying to curb Russian fossil-fuel revenues to force Russia to the negotiation table on Ukraine, both sides of the Atlantic have several overlaps in their interests.

Narratives for U.S. natural gas included it substituting coal as a "greener" alternative, and thus being a reliable fuel for Europe in times of energy crisis and as a supporter for its energy transition ambitions. For this narrative to become more accepted in Europe, part of the proceeds from the transatlantic LNG trade should be used to credibly enforce measures to prevent methane leakage and increase the respective accountability in the LNG value chain. Despite climate action not being high on the U.S. agenda now, investments into technology developments for certifying/"greening" U.S. LNG could become a competitive edge for the USA for years to come. After all, there is no other option for a transformation in this regard. Otherwise newly built LNG facilities would risk not having sufficient offtake, particularly towards the end of their repayment period. Same goes for Europe when satisfying downstream demand. This would enable the role of natural gas to become a true bridge in the energy transition, shaping transatlantic LNG trade with an outlook far beyond satisfying current natural gas demand in Europe.

Embedded in a wider set of strategic transatlantic projects, LNG trade and a "virtual transatlantic pipeline" could evolve into a cross-cutting transatlantic project and form a substantial part on the transatlantic political and trade agenda right from the start of a new Presidency of Donald Trump and a new German government after elections at the end of February 2025.

ABOUT THE AUTHOR

Andreas Kaiser is part of the Department for Energy Security and Economic Stabilization at the German Federal Ministry of Economic Affairs and Climate Action (BMWK) in Berlin, where he used to cover German and European natural gas infrastructure, crisis prevention/security of supply issues, LNG/ LNG trade, and was engaged in the efforts setting up hydrogen import infrastructure in and hydrogen supply corridors to Germany with a focus on the Baltic Sea, Denmark, the Southern Corridor, and Ukraine. From April 2024 onwards, Andreas has been seconded to the Unit for Energy Infrastructure at the Directorate-General for Energy of the European Commission in Brussels, Belgium.

Prior to joining the Federal Ministry, Andreas worked for several years for German development cooperation GIZ, including three years in Nairobi, Kenya, supporting industrial growth through private-sector investments in Africa, with renewable energy being one focus. After earning his Master's degree in economics, Andreas had started his career as an in-house consultant at the German energy major RWE and joined the Embassy of the State of Israel subsequently as an expert for renewable energy and the environment.

He is currently pursuing a Master's of Law degree (LL.M. oec.) in Economic Law with a specialization in money laundering at the University of Halle-Wittenberg, Germany.

DISCLAIMER AND ACKNOWLEDGEMENT

This report was prepared by Andreas Kaiser in his personal capacity. The opinions and analysis expressed in this report are the author's own and do neither reflect the views of the German Federal Ministry of Economic Affairs and Climate Action (BMWK), the German government, nor the American Council on Germany (ACG).

For this report the author organized about 50 individual meetings and engaged in subject-matter discussions with about 120+ individuals during three weeks in January/ February 2024 in New Orleans, Houston, and Washington, DC. He spoke at a conference panel on hydrogen and at several group sessions and visited an LNG production terminal in Louisiana.

Appreciation goes to the American Council on Germany for the opportunity to dive into this topic in the USA as well as the Embassy of the Federal Republic of Germany in Washington, DC, and the Consulate General in Houston for their support, as well as the many individuals who spared much of their time meeting and discussing with the author.