Fred H. Hutchison, President and CEO of The USLNG Association, looks to the future as the US LNG industry turns eight.

A YOUNG BUT VIBRANT INDUSTRY

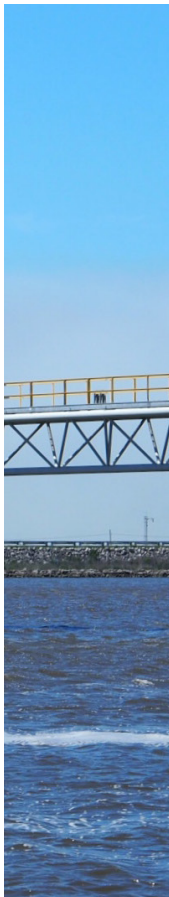
On 24 February 2016, the LNG tanker *Asia Vision* left Cheniere's export terminal on the Sabine-Neches Waterway – which runs along the border between Texas and Louisiana – and delivered its cargo of 3 billion ft^3 of natural gas to Brazil a few days later. Since then, the US LNG export industry has grown at an exhilarating average annual rate of 11 million tpy of installed baseload capacity, propelling the US to the top of the global LNG leader board.

The foundations

To understand what will be needed to ensure that the US retains its LNG leadership position in the decades to come, it is useful to examine the seven main 'pilings' upon which this young but vibrant industry has been built.

Abundant supply

The US is blessed with tremendous oil and gas resources and an exploration and production industry that continues to innovate, and thus produce more and more dry gas and associated gas (a byproduct of oil extraction). While some gas is still imported by pipeline from Canada (and some is exported to Mexico), US gas production continues to exceed domestic demand, leaving plenty of headroom for LNG exports without harming US residential or industrial consumers.



The Potential Gas Committee estimated that future US gas resources and reserves total nearly 4 trillion ft^3, which is more than 100 years of consumption at present domestic and export levels (Figure 1).

Regulatory predictability

Unlike other fuels, US government licenses are required to build natural gas infrastructure (both interstate pipelines and liquefaction terminals) and to export natural gas. Under the Natural Gas Act as amended, a prospective exporter must obtain a siting and construction permit from the Federal Energy Regulatory Commission (FERC) and a second permit from the U.S. Department of Energy (DOE) to export the gas itself. This two-step regulatory process is extremely time consuming and costly, but – until very recently – has been stable and predictable.

Affordability

Unlike LNG sold from other nations, the long-term contracts which underpin US exports contain modest take-or-pay requirements. Contractual liquefaction fees provide a sufficient cash flow for debt service, but most US contracts do not require offtakers to pay for either gas or shipping unless they 'lift the cargo'. This means that in severe market downturns (such as those that occurred during the pandemic), US LNG shipments can be cancelled at far lower cost than LNG from nations such as Qatar, which have much greater take-or-pay requirements. In addition, US LNG is generally sold at the Henry Hub price marker, which is often less than oil-linked prices from other suppliers.

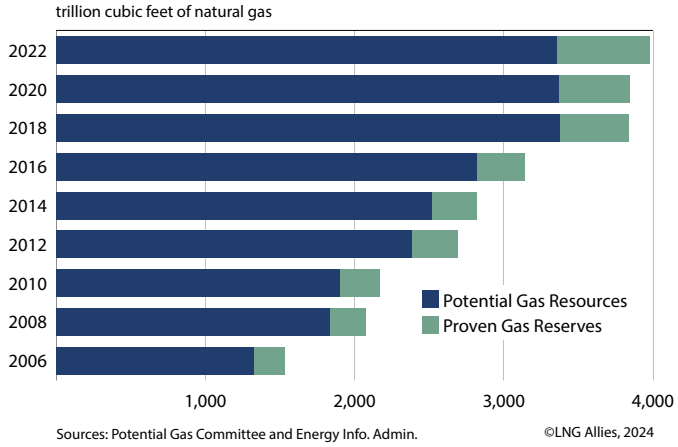


Figure 1. Future US natural gas supply. Growth in resources and reserves since beginning of the shale revolution.

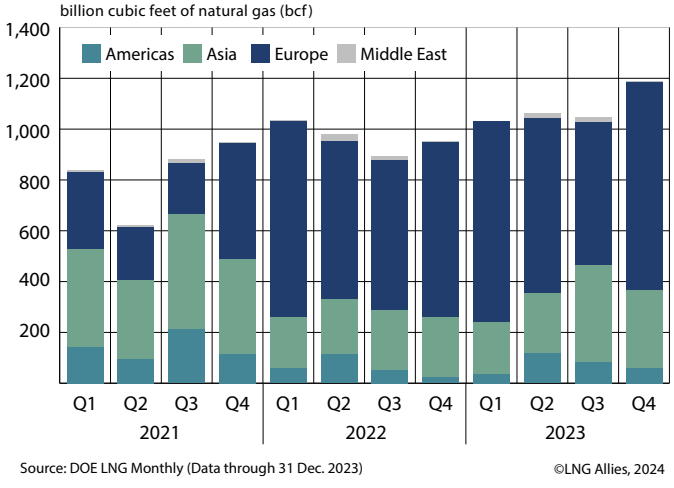


Figure 2. Regional distribution of US LNG shipments, demonstrating the value of 'destination flexibility.'

Destination flexibility

Another innovation in US LNG export contracts is the flexibility for the offtaker to direct a cargo to a destination of their choosing. This is possible because most US LNG is sold on a free-on-board (FOB) basis with only small volumes sold on a delivered ex-ship (DES) basis, which stipulates a certain port for delivery. It is this 'destination flexibility' that allowed US LNG cargoes to be diverted to Europe in 2021 and 2022 as Russia moved against Ukraine.

Low emissions

In recent years, the climate imperative has grown and global attention has focused on the reduction of methane leaks and flaring within the oil and gas industry. Gas companies in the US are reducing their carbon footprint in numerous ways, including the replacement of leaky equipment, enhanced monitoring, and third-party certification and audits. A recent, full lifecycle analysis conducted by the Berkeley Research Group (BRG) for LNG Allies confirmed that US LNG has less than half the emissions intensity of coal in European and Asian markets and far fewer emissions than pipeline gas from nations such as Russia.

Pipeline infrastructure

Many of the natural gas pipelines built in the US prior to the shale energy revolution (which began in earnest in 2006) were constructed to move natural gas north from production zones in Texas and Louisiana and offshore in the Gulf of Mexico. With the ramp-up of US LNG exports, many of these pipelines have reversed flow and now deliver gas south from the Marcellus/Utica and Haynesville basins to LNG terminals in Louisiana, Texas, Maryland, and Georgia. Like LNG export projects, interstate natural gas pipelines require FERC permits. These interstate pipeline applications have become highly contested and construction timelines and costs have expanded. Pipelines that do not cross state boundaries are not subject to FERC jurisdiction and are, therefore, often less controversial.

Bipartisan political support

Under the Natural Gas Act, the Secretary of Energy must approve US LNG export requests unless to do so would be "inconsistent with the public interest." Although the presumption favours export license approvals, applications have become increasingly controversial as environmental organisations have zeroed-in on DOE's public interest process in an effort to indirectly limit US gas production. These e-NGOs had little success during the Obama and Trump administrations but their cries to 'keep it in the ground' have resonated with certain Biden administration officials, especially those on the White House climate team.

Having examined the seven items that have underpinned the rapid growth of the US LNG industry over the past eight years, a look through a 'virtual spyglass' may

provide a glimpse of the issues that are steaming along, just over the horizon.

Resource availability

On 26 January 2024, the Biden administration instituted a 'pause' on issuing new US LNG export authorisations until DOE updates certain economic and climate studies. One of the updates now underway looks at how future levels of US LNG exports might affect domestic prices. Numerous economic studies – from both public and private sponsors – have found that US LNG exports have little (if any) economic impact on American consumers. The findings in these forward-looking studies were confirmed by backward-looking studies commissioned by the American Petroleum Institute and LNG Allies, which found that since 2016, US LNG exports have not had any "significant and sustained impact" on domestic prices.

Despite the findings in these studies, US LNG export opponents mistakenly conclude that future US natural gas supply growth may not keep pace with demand, especially if significant electric power increases materialise as artificial intelligence, data centres, and electric vehicles take hold. Gas demand and supply is a delicate dance that is only ever off balance for brief periods. The US gas industry can and does respond expeditiously to market signals, a post-pandemic development encouraged and endorsed by investors and other stakeholders.

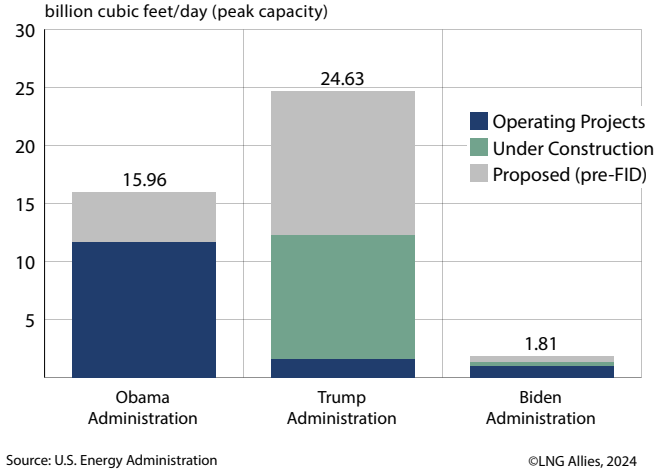


Figure 3. US LNG export levels approved during the Obama, Trump, and Biden administrations.

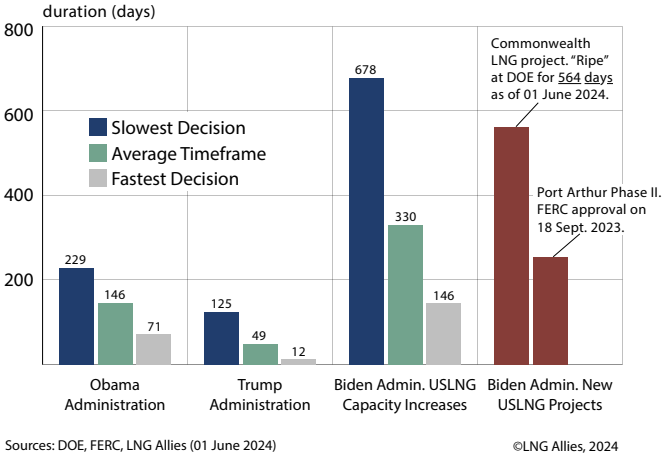


Figure 4. Comparison of time delays between FERC order and DOE export license approval illustrates the lengthy time it has taken the Biden administration to act.

Politics, regulatory stability, and infrastructure

An epic struggle is occurring in the US (and within other OECD countries) among factions with differing – and sometimes misinformed – views of global energy realities. This struggle takes many forms, including polarised political discourse which is becoming more combative as protests to 'end fossil fuels' escalate and activists lose sight of the central goals of decarbonisation, which are to reduce emissions and diversify resources.

But the skirmish over natural gas and LNG is only one misplaced battle in a much larger conflict.

The US has been deeply divided between the two political parties – the Democrats and the Republicans – for at least 45 years. This deep divide manifests itself in perpetually close elections and nonstop political posturing. This is true every year, but is particularly pronounced in a quadrennial election year (such as 2024) when control of the White House, Senate, and House of Representatives are all 'in play'. To put it mildly, the political climate could not be hotter right now.

All this leads directly to 'the LNG pause'.

While the Biden administration defends its move to pause US LNG export licenses "so that the studies can be updated," the decision was made not by the political officials at DOE most directly responsible for such authorisations but by the White House climate staff. The political nature of the pause is evident to even the most casual observer and it will undoubtedly continue until after all the 2024 electoral out-comes have been determined.

Thus, the question asked by everyone who has 'a dog in this fight' is: What will happen in 2025?

Both former President, Donald Trump, and President, Joe Biden, have each served one four-year term and are, therefore, barred by the US Constitution from serving more than one more term. With no prospect of re-election in 2028, both Biden and Trump and their political appointees would likely expand and accelerate their party's agenda. Of course, the US Constitutional system of 'checks and balances' means that while the President may control the executive branch, their power can be 'checked' by either Congress or the courts.

It is clear from their first terms that Biden and Trump have radically different approaches to energy, climate, and environmental policies. Perhaps most relevant to this article, the Trump administration's Energy Department issued US LNG export licenses within an average of 49 days after FERC had approved the underlying project. Even before the White House announced the US LNG pause in January, the Biden administration had instituted a de facto pause; DOE has not approved a single US LNG application since March 2023.

According to press reports, several oil, gas, and LNG CEOs met with President Trump at his Mar-a-Lago Club in Florida in April 2024. He reportedly told the assembled group that he would reverse Biden's LNG pause 'on day one' (meaning 20 January 2025) if he is re-elected. The outcome if President Biden is re-elected is more difficult to predict. Some within the Biden administration understand the

energy security value of US LNG exports but these officials are pitted against others who feel that American leadership in the energy transition is of overriding importance.

Conclusion

Regardless of the outcome of the presidential election, the US LNG industry will continue to build a bipartisan coalition to expand LNG exports, which provide tremendous economic rewards to the US and measurable climate, environmental, economic, and security benefits to America's global allies.

For the most part, the 'pilings upon which the US LNG industry has been built remain sound. America has ample gas resources to meet future domestic demand and export requirements. US LNG contracts have modest take-or-pay requirements and flexible destination clauses.

US gas production, transport, and liquefaction processes have fewer carbon dioxide and methane emissions than coal and gas produced in many other countries. And US gas pipelines and LNG export facilities continue to receive FERC authorisations, although not always at an optimum pace.

Finally, federal elections will be held on 5 November 2024, and within a few weeks (at most) it will be revealed which party controls the Senate, House of Representatives, and White House. Hopefully, with the 2024 elections in the rear-view mirror, bipartisan support for US LNG exports will return and the LNG 'pause' quickly lifted. After all, there is a growing awareness both in the US and overseas that, in the words of Maroš Šefčovič, the European Commission's Executive Vice President, 'America is now the guarantor of global energy security'. LNG

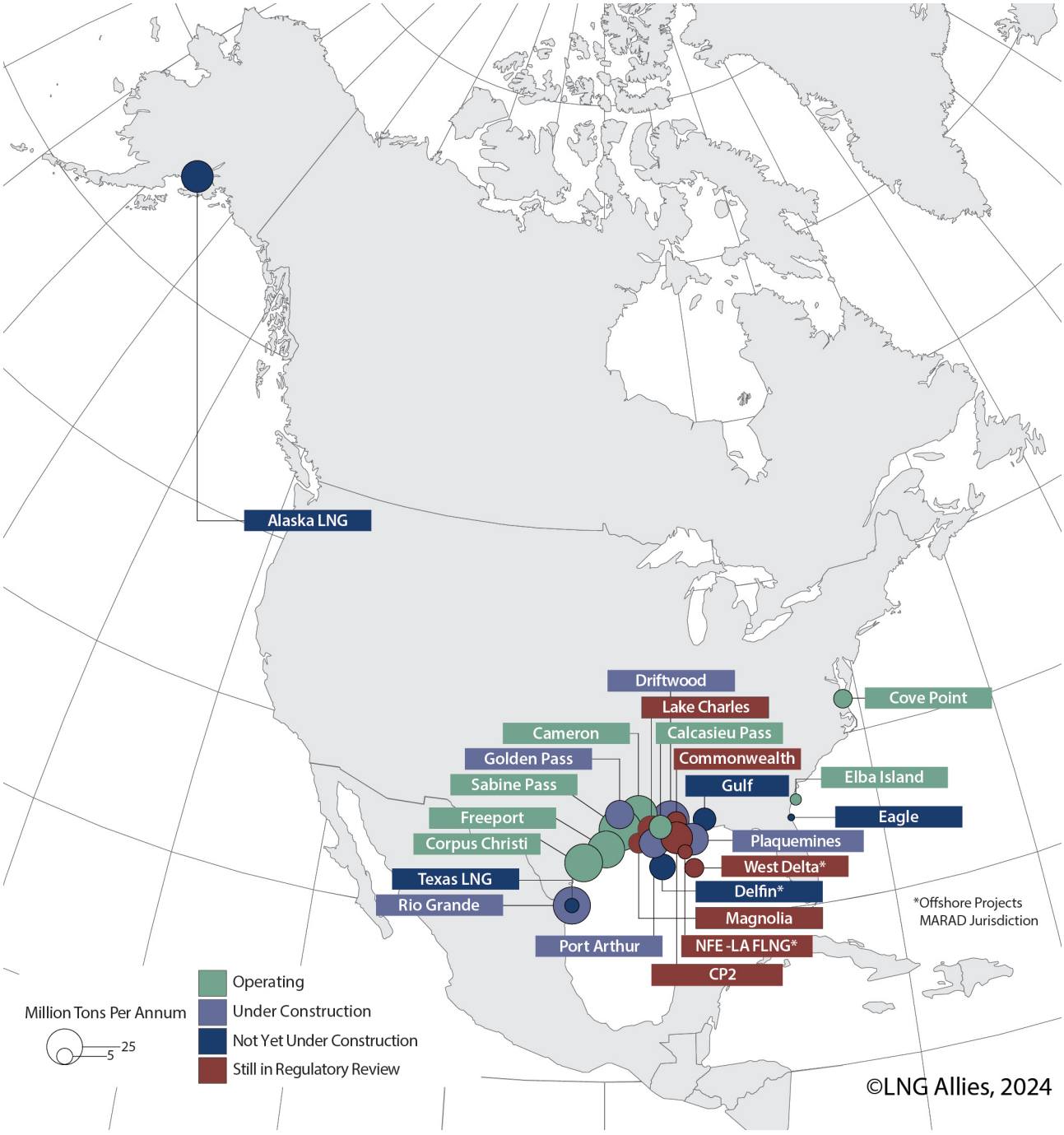


Figure 5. US LNG export projects operating, under construction, or in review.