LNG PROJECTS FAILING THE "CLIMATE TEST" KEY FINDINGS AND RECOMMENDATIONS

Essential context and key findings

In December 2024, the Biden Administration's Department of Energy (DOE) issued a study of the socio-economic and environmental impacts of U.S. liquefied natural gas (LNG) exports. One volume of the study demonstrates how to estimate the increase in global greenhouse gas (GHG) emissions caused by U.S. LNG exports from individual terminals using company-specific data.

The DOE has a strong precedent of considering the GHG emissions impact of LNG terminals as part of its public interest determination required by the Natural Gas Act. While previous studies have assumed without justification that U.S. LNG exports substitute 1-for-1 with other fossil fuels, the new study uses the Global Change Assessment Model, a well-established tool, to estimate the market and energy displacement effects of increasing U.S. exports. Thus, the new study describes a more holistic approach that is better suited to assessing the climate impacts of U.S. LNG exports in a world with soaring rates of renewable energy adoption and important, albeit uncertain, climate policy influences.

The new methodology implies a "climate test" as it shows how much companies would need to reduce production-through-liquefaction GHG emissions, relative to the sector average, to be considered "climate neutral." We apply this methodology to a selection of planned projects and assess the scenarios and assumptions used.

- Applying the DOE's methodology to five planned LNG projects—Venture Global CP2, Cameron LNG Phase II, Sabine Pass Stage V, Cheniere Corpus Christi LNG Midscale 8-9, and Freeport LNG Expansion—indicates that each of them would result in a net increase in global GHG emissions regardless of the climate policy, energy demand, and technology assumptions underlying the calculation. In practical terms, all five LNG projects appear to fail a climate test that the DOE put forward to ensure approvals are consistent with the public interest.
- Sustainability measures cannot make increasing LNG exports consistent with limiting warming to 1.5°C. Even if major steps were taken to reduce the GHG emissions associated with LNG production through liquefaction—such as gas supply basin switching, LNG terminal methane abatement, and powering liquefaction with renewable electricity—increasing LNG exports from the Gulf Coast would still lead to global GHG emissions increases that will produce dangerous levels of warming.
- Under a scenario with safer and more realistic constraints on the availability of carbon capture and storage (CCS), the climate impact of increasing LNG exports would be even greater because deeper reductions in fossil fuel production would be necessary. The DOE's most conservative CCS assumption under a Net Zero scenario surpasses feasible scale-up rates based on historical technology analogues and results in gas sector CCS volumes five times higher than in the International Energy Agency Net Zero Emissions scenario.
- While the methodology presented in the 2024 LNG Study is a major improvement upon previous federal analyses, it still fails to sufficiently account for emissions from large, accidental releases (such as "super-emitter" events), equipment malfunction, and malpractice. High rates of methane emissions during the ocean transport stage of the LNG supply chain are also not represented. Incorporating measurement-based data and more realistic assumptions would make clearer the immense climate impact of building new LNG infrastructure, especially in the near term.

Key recommendations

- Energy purchasers, financial institutions, and foreign governments should refrain from entering into long-term offtake agreements for U.S. LNG and financing of LNG infrastructure. Instead, these parties should prioritize measures that accelerate the renewable energy transition and plan for a managed phase-out of fossil fuels. G7 nations, in particular, should abide by their 2022 commitment to stop financing overseas fossil fuel infrastructure with taxpayer money.
- The U.S. Department of Energy should use the "climate test" to reject pending and future LNG export applications. Further, the Department of Energy should use its authority under the Natural Gas Act to reevaluate the public interest status of LNG projects that received authorizations without consideration of climate impacts or under analyses that predate the 2024 LNG Study.
- Congress should pass legislation that makes it a statutory requirement under the Natural Gas Act to assess the climate impact of gas exports and reject applications that would increase global GHG emissions under a credible scenario to limit warming to 1.5°C. Additionally, U.S. federal agencies should require all new proposed fossil fuel production and infrastructure projects to meet a similarly high standard under the National Environmental Policy Act.
- Where it is not possible to entirely phase out gas imports, foreign parties should insist upon transparent, independent, and representative measurement-based evidence to substantiate U.S.-based claims of methane abatement (e.g., under the European Union Methane Regulation).