WHAT ARE THE RISKS ASSOCIATED WITH THE DEVELOPMENT OF LIQUEFIED NATURAL GAS (LNG)?

The impact of fossil gas is not limited to its extraction and consumption: its transport is also a source of greenhouse gas emissions. When it is too complex to transport by pipeline, for example for transatlantic trade, fossil gas can be liquefied by cooling it to -160°C and transported by sea in an LNG carrier to a regasification terminal. This mode of transport is problematic in a number of respects, including: excessive energy consumption, methane leaks, and pollution. Beyond the environmental risks, excessive growth in fossil gas liquefaction and regasification capacity poses an economic risk to our societies, as demand for gas is set to decline over the coming decades. By supporting the expansion of LNG, financial players risk a carbon economy lock-in.

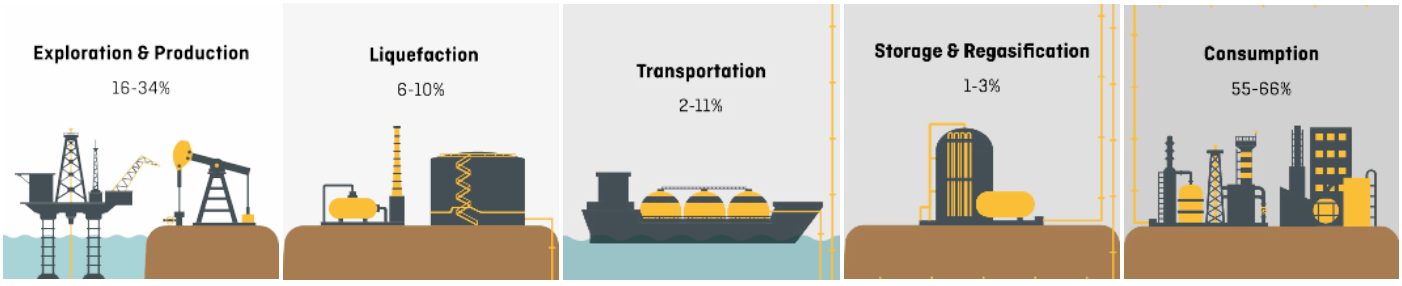
The development of new LNG terminals is sometimes presented as a geopolitical necessity, based on the assumption that it offers a more secure and diversified supply than pipeline transport. It is often argued that this advantage alone is enough to make LNG indispensable to our societies, justifying new investment. But its impact on the climate is far from negligible.

1. LIQUEFIED NATURAL GAS: ANYTHING BUT A NATURAL MODE OF TRANSPORT

a. A mode of transport that consumes energy at every stage

The liquefaction process consumes a significant amount of energy: on average, a liquefaction plant uses almost 10% of the fossil gas delivered to it for its own operations,[1] in particular to power its heat pumps. Once liquefied, the fossil gas travels many kilometres on board LNG tankers to reach locations for consumption. Once there, it is regasified.

Breakdown of greenhouse gas emissions in the LNG life cycle



Source: Solutions For Our Climate, Fueling the Climate Crisis: South Korea's Financing of Oil and Gas, 2021

1. TotalEnergies (in French only), Liquefied Natural Gas, September 2013

b. Methane leakage

Fossil gas is composed of methane (CH4), a greenhouse gas 83 times more potent than CO2 over 20 years.[2] Methane leaks can occur at any point in the LNG value chain: during pipeline transportation to export facilities, in liquefaction plants, during transfer to LNG tankers, during transportation by sea, or during regasification. Although LNG is often presented as an alternative to coal, these leaks cancel out the climatic "benefits" of gas, or even worsen the situation. This is particularly true of gas produced, liquefied and exported from the United States - the world's leading LNG exporter - where LNG terminals are linked to production fields by a network of pipelines at high risk of leakage.[3] American LNG is also mainly produced using hydraulic fracturing (shale gas), a process that emits large quantities of CO2. As a result, its carbon footprint is some 28% higher than that of coal.[4]

2. INVESTING IN LNG INFRASTRUCTURE DEVELOPMENT: A HIGH FINANCIAL RISK

a. Under-utilization of LNG infrastructure

The International Energy Agency's (IEA) Announced Pledges Scenario (APS) indicates that the LNG export terminals under construction today are sufficient to meet demand. These terminals are not even needed in its Net Zero Emissions by 2050 Scenario (NZE Scenario).[5] Fossil gas company LNG expansion plans therefore considerably increase the risk of LNG overcapacity. This dynamic will lead to a drop in the utilization rate of LNG infrastructure, and thus to a fall in economic profitability - according to the APS, two-thirds of LNG projects under construction risk not fully recovering their initial investment. This figure rises to three-quarters in the NZE Scenario.[6]

Largely under-utilized regasification terminals in Europe

If current plans for LNG infrastructure construction come to fruition, LNG import capacity on the European continent should reach over 400 billion cubic metres (bcm) by 2030, even though demand for LNG is not expected to exceed 150 bcm.[7]

The average utilization rate of the EU's LNG import terminals in 2023 was 58.5%, compared with 63% in 2022.[8] By 2030, the Institute for Energy Economics and Financial Analysis (IEEFA) forecasts a utilization rate of 36% for European LNG terminals, including those currently under planning and construction.[9]

There is a clear, high risk that LNG infrastructure developments will become stranded assets. This is particularly the case in the following countries: Spain, Turkey, the UK, France, Italy, and Germany.

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2. Intergovernmental Panel on Climate Change (IPCC), Climate Change 2021: The Physical Science Basis, 2021
3. Oil Change International, Jordan Cove LNG and Pacific Connector Pipeline Greenhouse Gas Emissions Briefing, January 2018
4. Robert W. Howarth, The Greenhouse Gas Footprint of Liquefied Natural Gas (LNG) Exported from the United States, May 2024
5. International Energy Agency (IEA), 2023 World Energy Outlook, October 2023
6. Ibid.
7. Demand for LNG in 2030 is expected to range between 150 billion cubic metres (bcm) according to IEEFA and 190 bcm according to S&P Global Commodity Insights. IEEFA, Global LNG Outlook 2024 - 2028, April 2024
8. IEEFA, European LNG Tracker, February 2024
9. IEEFA, Over half of Europe's LNG infrastructure assets could be left unused by 2030, March 2023

b. The impossible conversion of LNG infrastructure

The development of new LNG infrastructure is sometimes relativized in the name of possible conversion[10] - replacing fossil gas with bio-methane, liquefied petroleum gas (LPG), or hydrogen later. However, conversion possibilities are largely overestimated due to technical and economic limitations. The only possible exception is the conversion to hydrogen of certain long-term storage sites and long-distance transport pipelines, for use in "hard-to-abate" sectors. Developing new fossil gas infrastructure in anticipation of its replacement by biogas or hydrogen is not an adequate response to the realities of the current situation.

10. More information is available on the 'Gas Infrastructure Conversion' sheet.

RECOMMENDATIONS

Reclaim Finance calls on financial institutions not to present fossil gas as a transitional energy source and to commit to a complete short-term halt to all financial services that support fossil gas expansion across its value chain, including in the power generation sector. This includes an immediate halt to all support for new gas fields and liquefied natural gas (LNG) export terminals, as well as to the companies developing them.

Click here to consult our detailed recommendations for financial institutions.