BANKING ON A CLIMATE SHIPWRECK

EXPOSING THE ROLE OF GLOBAL BANKS IN THE EXPANSION OF MARITIME FOSSIL GAS

STAND.earth

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TABLE OF CONTENTS

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EXECUTIVE SUMMARY

International shipping is one of the largest greenhouse gas (GHG) polluters in the world, but the transboundary nature of emissions and the myriad of actors involved has meant that international coordination around the issue has been difficult. As a result, the shipping sector was not included in the Paris Agreement. Regulation of this international sector lies with the United Nations International Maritime Organization (IMO). The IMO has been slow to act, only passing its final GHG reduction strategy in July 2023. Even at its highest levels of ambition, the IMO reduction targets are not Paris-aligned. **Unless shipping rapidly decarbonizes, we will not meet a 1.5°C climate target, even if other sectors reduce emissions along those lines.**

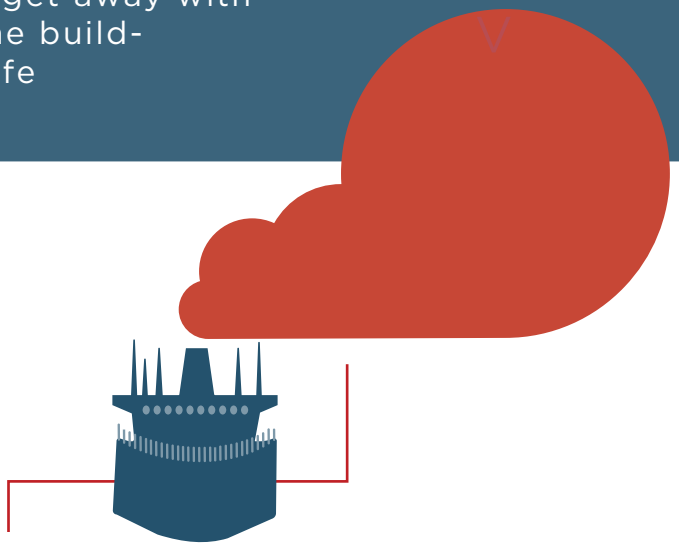
One solution posited for shipping and driven by the fossil fuel industry is using liquefied fossil gas (aka, liquefied natural gas, or LNG) as a "bridge fuel" to reduce emissions while cleaner technology is developed. Oil and gas companies like Shell have been looking at the maritime sector as a lifeline in a time of increasing climate action because it is out of sight and out of mind—despite its critical importance to achieving the Paris targets. **However, LNG is primarily methane, an extremely potent GHG and the second leading cause of climate disruption.** LNG shipping makes the climate impact of this heavily polluting sector much worse—at a critical time when emissions need to be drastically and rapidly reduced.

Bridge fuels are drop-in solutions in that they do not require billions of dollars in building or retrofitting vessels and entirely new infrastructure to support their use. Conversely, LNG is a false climate solution that draws investment away from clean, zero-emissions fuels and technologies. **By financing LNG, banks are locking the shipping industry into fossil fuel consumption for decades to come.** LNG facilities require expensive and unproven climate solutions like carbon capture and storage and carbon credits to seem "clean."

LNG contributes to human suffering and excess mortality. As a fossil fuel, burning LNG contributes to climate-related deaths. Unintentional methane releases throughout the fuel supply chain and from ship engines contribute to ground-level ozone formation. The massive scale of these projects, much like other oil and gas projects, drives the displacement of local peoples, leads to pollution and human rights violations, and is a resource curse for developing countries.

Banks are enabling oil and gas companies to get away with this myth by funneling billions in capital to the build-out of maritime LNG and making a climate-safe future far less likely.

This report reveals that an estimated US$335 billion in financing has flowed to maritime LNG in the 5 years since the Poseidon Principals launched on June 18,2019 to address emissions in maritime shipping. The Poseidon Principles are touted as a climate-responsible ship finance framework, yet they only scratch the surface of the scale of investment in maritime LNG due to its singular focus on vessel financing. Even so, every bank in the Poseidon Principles is far out of alignment with the IMO's insufficient GHG targets due to their investments in LNG vessels.



US$335
billion to maritime LNG

The top 10 banks are responsible for almost half of this financing, highlighting their outsized role in fueling the myth of LNG as a bridge fuel. Every bank in the top 10 has signed onto at least one — but most have signed onto multiple — climate financial initiatives that should preclude their involvement if they were applying in practice the climate finance initiatives to which they are party.

THE TOP 10 BANKS
are responsible for almost half of maritime LNG vessel financing

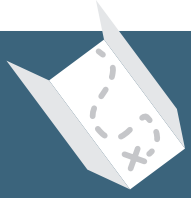
HOWEVER, SOLUTIONS EXIST.

SHORT-TERM EMISSIONS REDUCTION STRATEGIES

Include readily deployed measures like hull cleanings and coatings, slower ship speeds (slow steaming), and route planning and operational efficiency measures.

Hull cleanings and coatings

Slower ship speeds (slow steaming)



Route planning and operational efficiency measures.

Battery power storage

Wind-assisted propulsion

Solar to reduce energy demand

Renewable shore power

Hull design

Propeller optimization

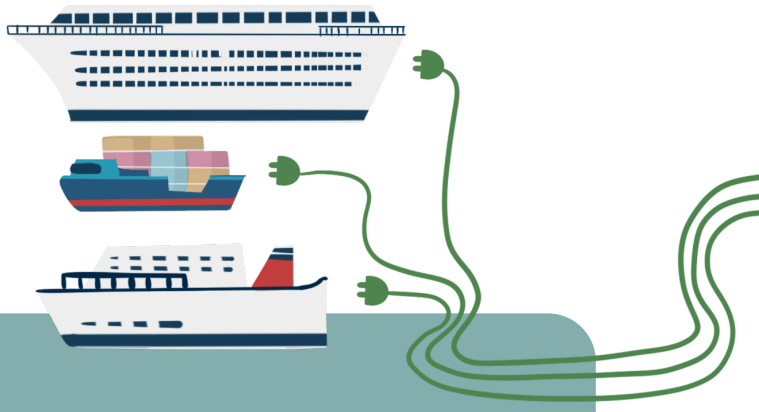
Green hydrogen-based fuels

MID- AND LONG-TERM SOLUTIONS

Include these efficiency measures plus battery power storage, wind-assisted propulsion, solar to reduce energy demand, renewable shore power, hull design and propeller optimization, and green hydrogen-based fuels.

Transoceanic shipping will require a combination of these measures to reduce energy demand and use zero emission fuels.

Other vessels (e.g. cruise ships, short-sea shipping, and ferries) are well positioned to go fully electric.



BANKS CAN PLAY A SIGNIFICANT ROLE IN THE DECARBONIZATION OF SHIPPING BY DIRECTING CAPITAL TO:

- **Scale up zero emission fuels**
- **Vessel efficiency retrofits**
- **Zero emission vessel (ZEV) newbuilds**
- **Existing vessel retrofits for zero emission fuels and technologies**
- **Scaling up renewable shore power and zero emission vessel fuel bunkering infrastructure**

But first, they need to come clean and give up the fallacy of LNG as part of the maritime shipping solution.

INTRODUCTION

International shipping often sails under the radar, but there is a climate shipwreck looming, and it is time to sound the alarm. Shipping touches every aspect of our lives: the food we eat, the clothing we wear, the electronics we rely on, the cars we drive. In fact, over 80% (by volume) of all global trade was at one point on a massive vessel plying the world's oceans.[1] This has come at a great cost to the climate. The Intergovernmental Panel on Climate Change has made the task before humanity clear: global greenhouse gas (GHG) emissions must peak no later than 2025.[2] By 2030, anthropogenic methane emissions must be reduced by 34%–40%.[3]

The continued expansion of shipping powered by liquefied fossil gas (aka, liquefied natural gas, or LNG)[4] would make limiting warming to 1.5°C impossible, regardless of actions taken to reduce emissions in other sectors. The inclusion of LNG tankers and LNG export/import terminals further worsens the climate footprint of this heavily polluting sector. Major bunkering hubs exist in the Netherlands, Norway, the United Kingdom, Spain, Canada, the United States, Singapore, Japan, Panama, Dominican Republic, Germany, and China. Some of these hubs, like Japan and Singapore, do not have LNG sources nearby and rely on LNG tankers to transport LNG to ports. For example, the Ichthys LNG field in Australia supplies LNG to Osaka Gas in Japan, which is planning to roll out LNG bunkering in 2026.[5]

The financial sector plays a major role in the expansion of maritime LNG, including LNG tankers, LNG container ships, and LNG bunkering vessels (as well as the port and LNG processing infrastructure that supports it). It must accept that LNG is worse than a false climate solution—it is, in fact, a climate disruption accelerant. This fossil fuel will not contribute to aligning global carbon emissions with the Paris Agreement nor help banks fulfill their commitments to be part of the climate solution.

THE ROLE OF SHIPPING IN THE CLIMATE CRISIS

Shipping is one of the largest GHG emitters globally, accounting for approximately 3% of all climate pollution emissions.[6] Put another way, if it were a country, international shipping would be the world's sixth largest climate polluter—more than Germany.[7] Between 2012 and 2023, GHG emissions from the shipping sector increased by 20%.[8] Unless action is taken to reduce emissions, shipping emissions could reach 130% of 2008 levels by 2050.[9]

The fossil fuel industry has been looking at the maritime sector as a life raft in a time of increasing climate action for decades.[10] LNG is primarily methane and has been proposed as a so-called "solution" or "bridge fuel" to decarbonize the maritime sector. This solution could not be further from the truth: methane has 84–87 times more global warming potential compared to an equivalent amount of carbon dioxide over a 20-year period and is between 28 and 36 times more potent a GHG over a 100-year period.[11] It is the second leading cause of climate disruption after carbon dioxide.[12]

Shipping is one of the largest GHG emitters globally, accounting for approximately 3% of all climate pollution emissions.

LNG Fueled Shipping vs **Business-as-Usual Shipping**

LNG AS A FALSE CLIMATE SOLUTION

LNG-powered vessels worsen the already sizable climate footprint of this heavily polluting sector. In fact, a 2020 analysis from the International Council on Clean Transportation showed that LNG-fueled shipping is between 70% and 82% worse for the climate than oil-fueled business-as-usual shipping. A subsequent real-world measurement study found that unintentional releases of unburned methane from ship engines (methane slip) in at-sea conditions from the most common type of LNG-powered ship engine were even higher than the 2020 analysis concluded—6% as measured in real-world operations vs 3.5% in the earlier modeled study.[13]

The *Fourth IMO Greenhouse Gas Study* found that between 2012 and 2018, the shipping sector saw a massive increase of between 151% and 155% in methane emissions.[14] This increase was due to the uptake of LNG as a marine fuel and was disproportionate to the more moderate increase of 28%–30% in LNG fuel usage for the same period.[15] The discrepancy between fuel usage and methane emissions was largely attributed to methane slip.

LNG INFRASTRUCTURE EXPANSION

There is an urgent need to address LNG as a false climate solution before further investment in LNG vessels and infrastructure expansion. **Further expansion of LNG vessel fleets and bunkering threatens to lock in fossil gas use in a heavily polluting sector for decades to come** and will create new sources of GHG emissions that will drive the climate emergency.[16]

Furthermore, the build-out of maritime LNG requires deep investment in new bunkering facilities [17] and vessels. While there is a pilot project to convert two LNG tankers to bunkering vessels in Europe,[18] **the vast majority of LNG bunkering infrastructure is new construction**. Likewise, vessels cannot simply switch from using oil-based fuels to fossil gas. Either existing vessels must undergo massive retrofits to install new engines designed to burn LNG, or **entirely new vessels designed to run on fossil gas must be built.** Big oil and gas companies have lobbied ship operators, global regulators, and port authorities around the world for years to build new LNG-fueled ships and the ship refueling (bunkering) infrastructure to support them because they see a fossil fuel future in maritime LNG.[19]

In response, the shipping industry is ramping up production of a new generation of LNG-powered ships, with fossil gas as the most common propulsion option selected for newbuild container ships.[20] In fact, the number of LNG-powered vessels has increased 181% since 2020.[21] As of January 2024, there were over 1,000 LNG-powered vessels in operation or on order, a figure which excludes LNG tankers.[22]

All of this investment in a potent fossil fuel, and the technological lock-in it will create for years to come, is also energy and financing that is not flowing to real climate solutions include efficient ship designs, wind-assisted propulsion, battery power storage, and bringing green hydrogen-based fuels to scale.

Refueling massive cargo ships, cruise ships, and other ocean-going vessels requires an enormous amount of port infrastructure: the pipelines to transport the fuel to the port, the storage of huge fuel volumes on site, and the transfer of that fuel into the vessel fuel tanks. There are three primary methods for getting fuel into tanks: port-to-ship (PTS), with refueling at berth; truck-to-ship (TTS); and ship-to-ship (STS) (see Figure 1). Ships that refuel other vessels are referred to as bunkering vessels and are designed solely for this purpose. STS fueling has the highest market share and is projected to still be the most lucrative segment by 2027.[23] A standard-capacity bunkering vessel costs US$50 million on average.[24]

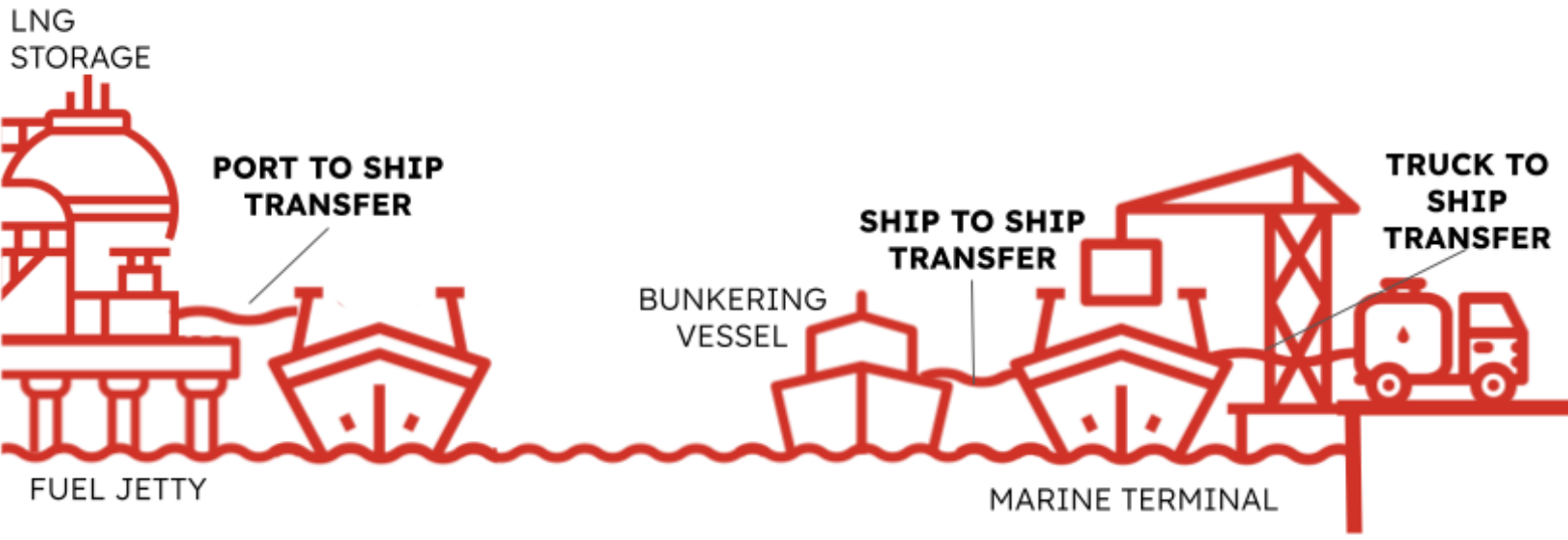


Figure 1. LNG bunkering at port can take several forms: truck-to-ship (TTS), ship-to-ship (STS), or direct from the fuel jetty (port-to-ship [PTS]).

LNG bunkering infrastructure has been rapidly expanding in ports around the world. In 2019, the LNG bunkering market was valued at US$0.38 billion.[25] It is currently valued at approximately US$1.26 billion and is projected to reach US$4.73 billion by 2029 (see Figure 2).[26] Put another way, in 2020, there were 96 ports worldwide that had LNG bunkering capabilities.[27] According to data furnished by SEA-LNG,[28] there are currently approximately 190 ports with LNG bunkering infrastructure, with another 80 ports[29] either actively building or considering LNG bunkering infrastructure projects. LNG remains the most popular fuel choice for newbuild vessels.[30] According to industry executives, lower LNG prices and more LNG-capable vessels will further increase demand for LNG marine fuel.[31]

The build-out of LNG vessels and facilities, including bunkering infrastructure and export/import terminals (see Table 1), requires massive investments. These projects are often funded through both public and private investors (such as export-import banks and large commercial banks like Citi[32]). For example, in 2022, SeaSpan secured US$1.4 billion in funding for 10 new LNG container ships from the Export-Import Bank of Korea and Citi. The total cost of SeaSpan's 70 LNG vessel newbuild program was a staggering US$7.6 billion.

Status	Number
Operating	374
Under construction	109
Proposed	308
Canceled	323
Shelved	91
Retired, mothballed, or idled	51
Total operating, under construction or proposed	**791**

TABLE 1 Global LNG Terminals[33] as of July 2024

Costs for new LNG facilities can also reach billions of U.S. dollars.[34] For example, the proposed Galveston bunkering and liquefaction project is projected to cost US$500 million if completed.[35] Likewise, the Woodfibre export terminal in British Columbia, Canada, a rather small terminal in the context of other projects, is projected to cost nearly US$1.2 billion, according to industry figures.[36]

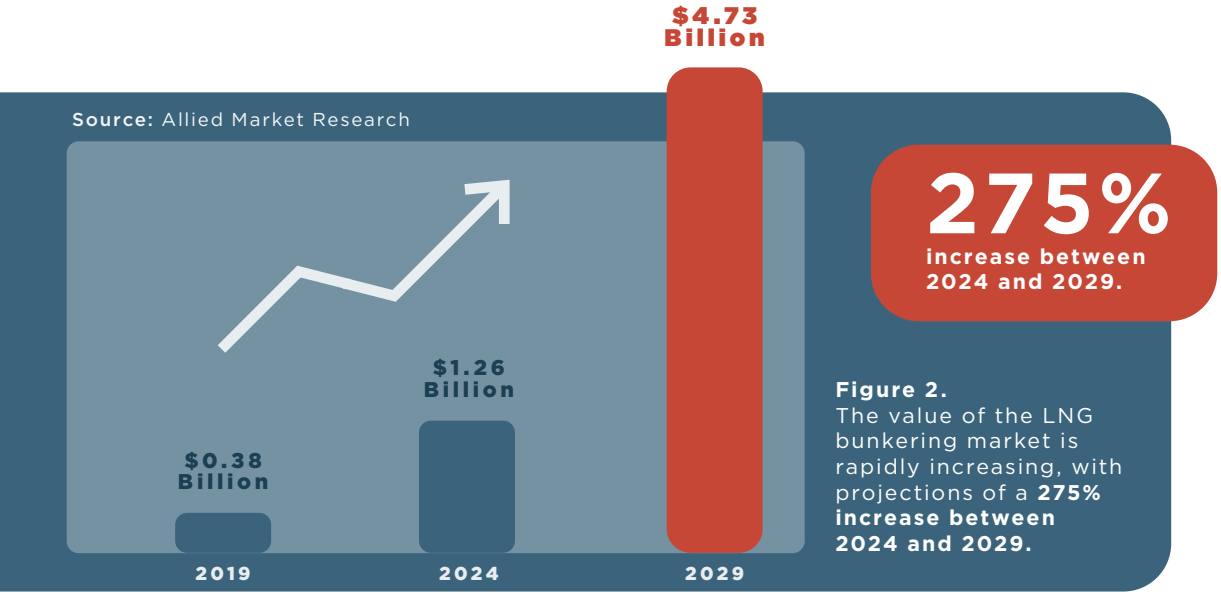


Figure 2. The value of the LNG bunkering market is rapidly increasing, with projections of a **275% increase between 2024 and 2029.**

THE ROLE OF BANKS

Financial institutions play a major role in providing the flow of credit for the build-out of these projects because many companies cannot cover the high costs of typical maritime LNG projects without borrowing capital or raising it via bond issuances. **If these institutions continue to fund LNG projects, the implications of such financing would make it almost impossible to limit global warming to 1.5°C.**

Conversely, banks and other financial institutions can—and should—play a critical role in funding fossil and nuclear-free, zero-emission vessels, fuels, and technologies, as well as the port infrastructure to support the green shipping transition. As such, it is important to look at how climate commitments from financial institutions provide guardrails for financing decisions around fossil gas.

Bank policies around exclusions and screens for LNG export and import terminals have been thin on the ground and not impactful—and they appear to have been nonexistent for LNG-powered vessels and bunkering projects thus far.[37] LNG and shipping are lucrative sectors for commercial banking, and banks appear to be hesitant to take actions that impact their business value in these areas.

These banks seem to be ignoring even the analysis of the World Bank, which recommended in its 2021 report on decarbonizing the maritime sector that countries avoid further policy support and end existing support for LNG as a bunker fuel.[38] Its analysis states:

"LNG is likely to play a limited role in shipping's decarbonization, and countries should avoid new public policy that supports LNG as a bunker fuel, reconsider existing policy support, and continue to regulate methane emissions to put shipping on a Paris-aligned GHG emissions trajectory."

— World Bank[39]

The World Bank followed this report with a submission to the United Nations International Maritime Organization (IMO) detailing its concerns with LNG as a marine fuel:

"Methane leakage can occur at each stage of LNG's lifecycle (i.e. during extraction, distribution, and combustion), and represents the accidental release of a gas which is 86 times or 36 times more potent than CO2 over a 20-year or a 100-year period, respectively. Therefore, even small volumes of methane leakage can diminish any GHG and climate-related justifications for using LNG as a low-carbon substitute for oil-derived fuels."

—World Bank[40]

Further, the International Energy Agency (IEA) has been clear that there is no need for new oil and gas midstream infrastructure in net-zero transitions, but this has not translated into meaningful action by financial institutions to curtail their lending to new LNG infrastructure, particularly in the shipping industry.[41]

However, these institutions must grapple with the risk that these LNG newbuilds and bunkering infrastructure projects will not find demand as the global economy embraces renewable energy, leading to stranded assets and major financial risks.[42] This risk should give financial institutions and their insurers pause.

While a handful of banks have made commitments related to LNG and shipping, loopholes and vague statements have meant that the impacts of these commitments on financing have been minimal.[43] In September 2024, ING enacted some more stringent new policies, committing to the exclusion of "all new general financing to pure-play upstream oil and gas companies that continue to open new fields – including general corporate financing and bonds."[44]

To complement this exclusion, the bank also decided to stop providing "new financing for new LNG export terminals after 2025, in line with observations from the IEA's 2023 World Energy Outlook."[45] New terminals drive demand for new fields, and new fields, and new fields drive demand for new terminals, so the commitment to exclude financing for both is a meaningful step. However, while this is a step forward, it does not cover recent transactions like ING's support for Cheniere Group's bond refinancing in May 2024. The deal was worth an estimated US$1.2 billion for Cheniere, who is the operator of the United States' largest LNG export terminal at Sabine Pass in Louisiana.[46] The Sabine Pass Stage 5 expansion project is slated to start operating in 2031 at a cost of upwards of US$15.5 billion.[47] Deals such as bond refinancing help to restructure finance for the LNG export terminal and its expansion.[48]

ING also commits to:

". . . increased shipyard capacity for retrofitting among governments, shipyards, and branch organisations to support sustainable practices in the shipping industry. Partnering is needed between financial institutions, governments, development banks and specialised institutions to enable green corridors and connect clients to sustainability funds. Implementation of a CO2-levy or market-based mechanism to incentivise emission reductions and promote environmental responsibility within maritime operations."

—ING Climate Progress Update 2024[49]

While these shipping-related commitments sound impressive, they do not explicitly limit growth in LNG vessels and bunkering infrastructure and may even see investments in LNG-powered shipping as part of the solution. For example, in 2023, ING loaned an estimated US$236 million to Hyundai Merchant Marine for 12 newbuild LNG-ready container ships.[50]

This means that the gulf between bank climate commitments and maritime LNG financing is still too vast. Banks need to do more to create the conditions that the World Bank and the IEA say are necessary for net-zero transitions, namely, no new LNG fields, no new midstream infrastructure, and no new LNG shipping build-out.

A CONTAINERSHIP-SIZED GAP IN CLIMATE COMMITMENTS

THE POSEIDON PRINCIPLES

There has been an increase in the number of sustainability policies employed by banks to address climate, environmental, and human rights issues, including specific shipping-related policies under the Poseidon Principles. The Poseidon Principles, created on June 18, 2019, are a framework for assessing the climate alignment of ship finance portfolios. This initiative aims to catalyze the decarbonization of the shipping sector through climate-responsible ship finance.

While the Poseidon Principles do not explicitly address LNG-powered vessels, the stated objective of the principles is to **align banks' ship finance portfolios with climate targets.**[51] It also sets interim targets for 2030 and 2040 while considering full life-cycle "well-to-wake" emissions. Currently, there are 35 signatories[52] representing more than 80% of the global bank loan portfolio for vessel finance. It is important to note that nothing within the Poseidon Principles limits signatories from taking more ambitious action than indicated in the framework itself.

The Poseidon Principles are being updated to align with the final IMO GHG strategy to achieve net-zero emissions from international shipping by 2050 (compared to 2008 levels). In July 2023, the IMO passed its final GHG reduction strategy. This dramatically shifted the regulatory landscape because it included all GHGs, including methane, whereas the previous iteration only set targets for carbon dioxide. The updated GHG reduction strategy also stipulates that emissions must be calculated on a well-to-wake,

life-cycle basis.

The IMO agreed to absolute GHG emissions reductions from a 2008 baseline of:

- At least 20%, striving for 30% by 2030
- At least 70%, striving for 80% by 2040
- Net-zero by 2050

While the final IMO GHG reduction strategy is far more ambitious than the earlier version, it still falls short of the Paris Agreement. Its most ambitious "striving for" targets would result in 1.6–1.7°C warming. Thus, additional action above and beyond the IMO targets must be taken if warming is to be limited to 1.5°C.

THE CLIMATE BONDS INITIATIVE

The Climate Bonds Initiative is an international nonprofit organization that aims to mobilize capital for climate solutions in line with science-based targets and the Paris Agreement. It explicitly excludes LNG vessels from its shipping certification criteria.[53]

PRINCIPLES FOR RESPONSIBLE BANKING

The Principles for Responsible Banking (PRB) address both climate and other corporate responsibility issues. While the Poseidon Principles chose to follow the IMO GHG process, the PRB state that signatories are expected to align portfolios with the Paris Agreement's 1.5°C target. The PRB guidance does state that frameworks from other credible sources may be used for industry-specific targets but stipulates that these industry-specific frameworks used must be Paris-aligned.[54] Despite this clear framework, there is a massive gap between commitment and action. Six of the top 10 banks funding the build-out of maritime LNG are also signatories to the PRB.

The PRB guidance also identifies the UN Environment Programme (UNEP) Emissions Gap Report 2020[55] as a core document. The UNEP report examines international shipping and aviation, which fell outside the Paris Agreement framework due to the international nature of these industries. It further explored solutions for decarbonizing the shipping sector, including slowing ship speeds (slow steaming), efficiency retrofits, and (explicitly) non-fossil fuels and technologies (e.g., battery power storage, wind-assisted propulsion, and fuels sourced from renewables, such as green hydrogen and ammonium).

6 OUT OF THE TOP 10 BANKS

funding the build-out of maritime LNG are also signatories to the PRB

THE NET-ZERO BANKING ALLIANCE

This UN-convened, industry-led alliance is the climate-focused subgroup of the PRB. Initially, the Net-Zero Banking Alliance (NZBA) signatories used the PRB guidance. However, in March 2024, NZBA members voted to update the guidance. The updated guidance reiterates the founding principles of the NZBA.[56] It states: "Targets shall at a minimum align with a goal to limit global warming to 1.5°C above the preindustrial average by the end of the century, be science-based, and support the transition toward a net-zero economy by 2050 [emphasis added]."

While the updated NZBA guidance notes that sector-specific metrics may be used, including intensity metrics, it makes it clear that an intensity metric should not be applied exclusively. In its guidance on reporting, it states:

*"The financed emissions profile of the bank's portfolio shall be calculated and disclosed annually. This **shall** include, where targets have been set: Absolute emissions; **and** Portfolio-wide emissions intensity (e.g., CO_2e/USD lent or invested); **and** Sector-specific emissions intensity (e.g., CO_2e/metric)."* [57] *[emphasis added]*

It continues:

*"The scenarios used by banks **shall** be aligned with a 1.5°C by end of century outcome and shall come from credible and well-recognised sources. Banks should provide a rationale for the scenario(s) chosen. . . Banks may use different scenarios for different parts of the portfolio, though they **shall** ensure that each scenario is aligned with a scenario as defined in these Guidelines."* [58] *[emphasis added]*

Further, the 2024 NZBA guidelines are clear that they apply not only to lending and investing but also to capital market activities and both financed and facilitated emissions.

Here again, the distance between words and actions is a gulf. All of the top 10 banks funding maritime LNG build-out are party to the NZBA, which should preclude participation in this maritime fossil fuel expansion.

PARTNERSHIP FOR CARBON ACCOUNTING FINANCIALS

The Partnership for Carbon Accounting Financials (PCAF) Global GHG Accounting and Reporting Standard for the Financial Industry also makes it clear that both financed and facilitated emissions are included. Its standard covers seven asset classes, including, among others, equity and corporate bonds, business loans and unlisted equity, and project financing.[59]

This framework enables financial institutions to establish a baseline of financed GHG emissions and requires setting science-based targets and alignment with a 1.5°C target. Yet, six of the top 10 banks funding maritime LNG projects and companies are signatories to the PCAF.

It is past time for banks to act on the commitments they have made. If banks were to follow through on compliance with the climate finance frameworks to which they are party, LNG shipping would be dead in the water and zero-emission shipping would be rapidly gaining steam toward a livable future.

METHODOLOGY

All data was downloaded from IJGlobal, which provides financing data covering all aspects of the international infrastructure and energy finance industry.[60] Fixed income data was downloaded, including transactions (aka, loan and bond underwriting deals) between June 18, 2019, and June 18, 2024. The search terms were "LNG," "Maritime transport," and "Ports." Results consisted of 1,365 financial transactions. These transactions were reviewed to determine if they were related to maritime LNG expansion, including LNG tankers, LNG bunkering vessels, LNG carriers, LNG bunkering port infrastructure, and LNG facilities that included export and import terminals (see Annex 2 for the full criteria). Given the ambiguity around the use of proceeds for some transactions, it was not always possible to identify if the transaction or company included any LNG-related financing or operations. In these cases, the transaction was omitted from the study. From a total of 1,365 transactions, only 175 were used in the final analysis.

The data was cleaned for analysis, including identifying deal tranches and removing duplicates. Each transaction was then coded according to information on the use of proceeds where available. Where IJGlobal coded for "finance type," including project, corporate, and public sector finance, the analysis reviewed the use of proceeds and coded the deals according to their relationship to maritime LNG infrastructure. Instead of basing the project finance type on asset-based lending, the research coded deals as "project-related" when they were asset-based, as well as in other situations, such as for pure-play companies (e.g., a company set up for a specific LNG export terminal). For example, a bond issue might be coded by IJGlobal as corporate finance, but upon closer inspection if the deal details or other public information state that the bonds were issued for a certain facility/vessel, then we have coded it as "project-related."

Moreover, we have taken corporate financing and reviewed the categories to shift some deals categorized as project financing over to "corporate-purpose" (e.g., if a company that has LNG assets borrows money through a bond for unspecified purposes, then it is categorized under "corporate-purpose"). The rationale for this approach is that there is a lot of ambiguity in how proceeds from loans and bonds are actually spent, and if we rely only on finance type, we miss some corporate financing going to projects and vice versa.

IJGlobal reports league table allocations from Bloomberg, where banks are assigned allocations of deal values in millions of US dollars, based on their role in the transaction. The data also indicates the role(s) each bank played in the transaction (e.g., bond arranger, adviser, etc.). See the Glossary in Annex 1 for further definitions of role categories from IJGlobal. For ranking and reporting on the top banks, the league table allocations were summed for all relevant transactions where the bank had a role as "Bond Arranger" or "Mandated Lead Arranger" (MLA). For reporting overall financing, the transaction values, reported in millions of US dollars, reported for each transaction were summed. For ranking companies,[61] the value of each transaction is divided equally among the companies, following the definition of "sponsor" provided by IJGlobal (see Annex 1), and then summed for each company.

	USD (million)	% of total Financing
Total Financing	$335,365	100%
Total League Table Allocations	$276,697	83%

TABLE 2 Comparing the total financing with the sum of all league table allocations reveals that not all banks providing maritime LNG financing are given league table allocations, especially if they are more minor financiers.

Trends in project-related vs. corporate-purpose financing and loans versus bonds were explored for the data set (using total transaction value) and for each bank (using their league table allocations). Total transaction value and league table allocations do not sum to the same grand total because not all banks are given league table allocations. As a result, league table allocations only make up 83% of the total financing (see Table 2).

Climate commitments were tallied for the top banks and assessed against lending to reveal limitations and gaps between climate goals and current lending.

DATA LIMITATIONS

This report includes project-related financing and corporate-purpose financing. Corporate-purpose financing included herein is not directed toward specific projects; rather, it is provided at the corporate level for general purposes. While companies in the report are all engaged in LNG activities, it is not possible to trace their corporate-purpose lending specifically to their LNG activities due to ambiguities in the data and a general lack of transparency in corporate use of proceeds. While we take corporate-purpose financing into account in the analysis, we split it out from project-related financing in our results to recognize this limitation inherent in the data.

THE TOP 10 BANKS CONTRIBUTING TO THE CLIMATE SHIPWRECK

In the last 5 years, financial institutions, including major banks like Citi, facilitated an estimated US$335 billion in 175 transactions related to maritime LNG financing aimed at expanding LNG as a "bridge fuel" for the shipping industry. While over 160 banks are identified as lenders and bond underwriters in the database, just 10 major banks are directly responsible for almost half of this financing, even though they are only 5% of the number of banks involved. This ratio illustrates their outsized impact on LNG expansion and the related climate impacts. These banks all have climate-related commitments that do not square with their support for maritime LNG.

The top 10 banks—Mitsubishi (MUFG), Mizuho, JPMorgan Chase,, Bank of America, Sumitomo Mitsui, Citi, Goldman Sachs, Santander, RBC and HSBC—funded an estimated US$127 billion in deals conducted over the past 5 years, since the Poseidon Principles were signed (June 18, 2019 to June 18, 2024) (see Table 3).

Rank	Bank	Project-Related	Corporate-Purpose	Total
1	**MUFG**	$11,320	$7,038	$18,358
2	**Mizuho**	$12,898	$4,353	$17,251
3	**JPMorgan Chase**	$5,205	$10,509	$15,714
4	**Bank of America**	$2,986	$10,591	$13,576
5	**Sumitomo Mitsui**	$9,093	$4,376	$13,469
6	**Citigroup**	$2,862	$10,545	$13,407
7	**Goldman Sachs**	$3,143	$6,863	$10,007
8	**Santander**	$5,372	$3,901	$9,273
9	**RBC**	$6,147	$2,198	$8,345
10	**HSBC**	$2,813	$5,185	$7,998

Table 3. Top 10 banks and their project-related and corporate-purpose financing, ranked by total financing, based on league table allocations in USD million.
Source: IJGlobal.

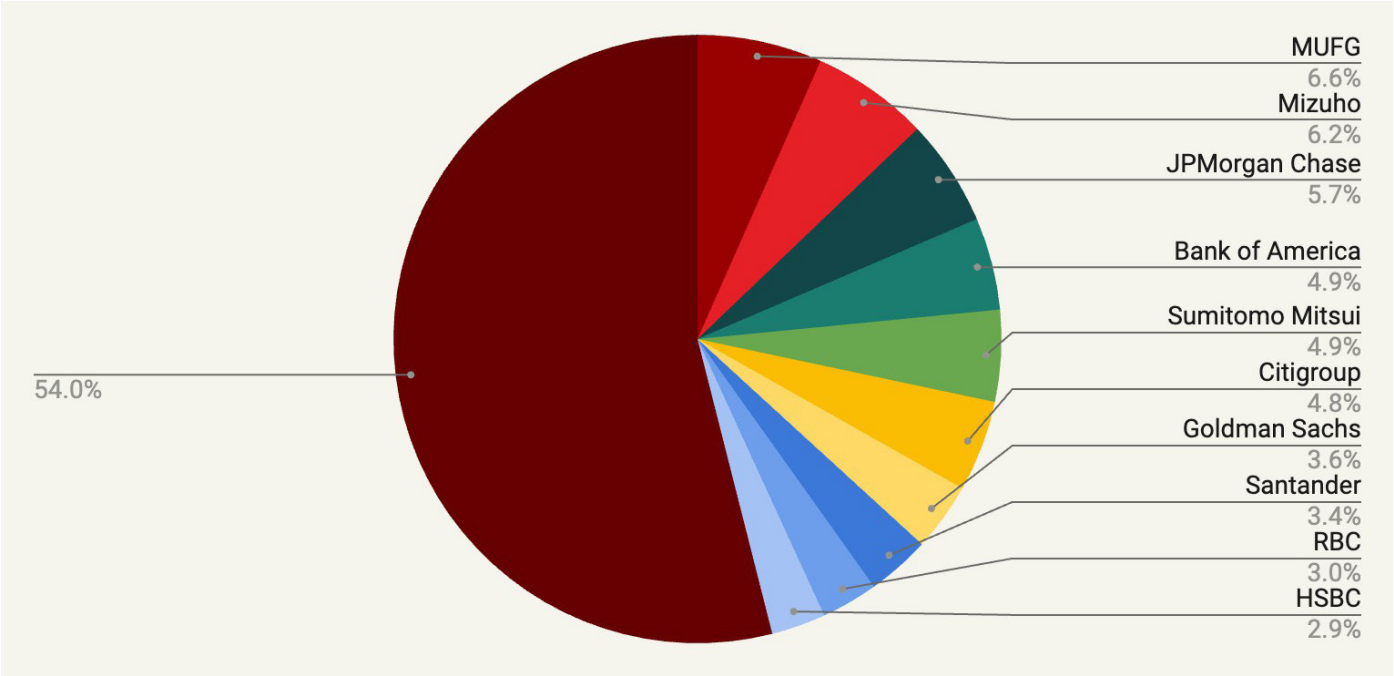


Figure 3. The financing attributed to the top 10 banks supporting maritime LNG over the past 5 years makes up almost half of the total value of transactions while only accounting for 5% of the banks involved in those transactions.

PROJECT VS. CORPORATE FINANCING AND THE ROLE OF BONDS

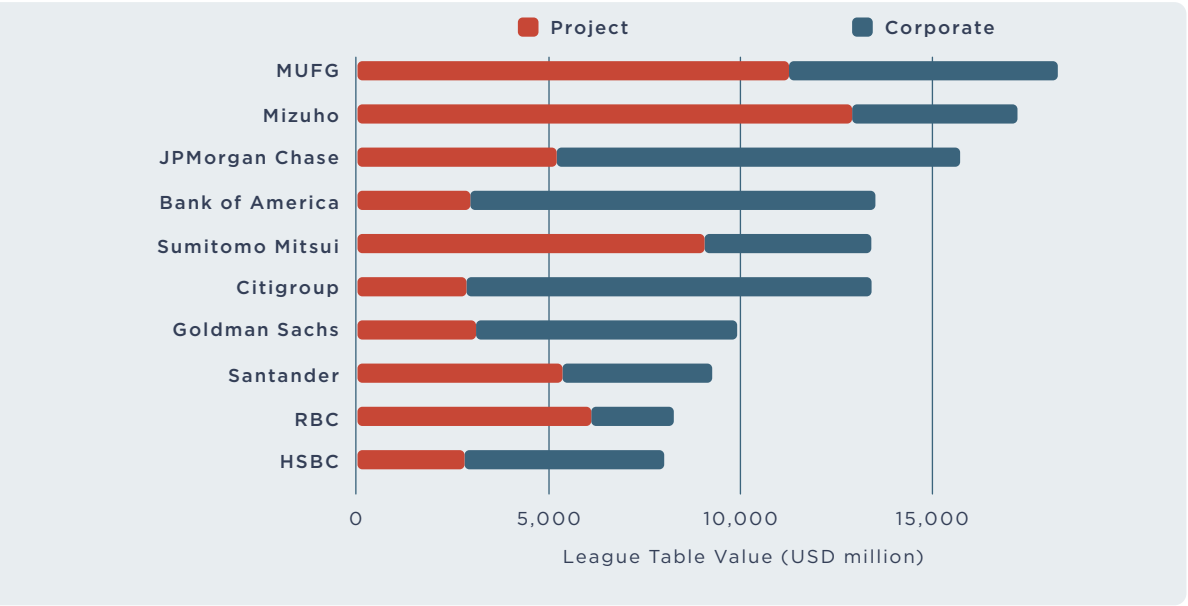


Figure 4. The estimated financing (using league table allocations) of the top 10 banks supporting maritime LNG expansion globally, between June 18, 2019, and June 18, 2024, broken down by project-related and corporate purpose financing.

Of the total value of the transactions reviewed in this analysis (US$335 billion), over half were project-related—e.g., supporting new LNG infrastructure, LNG vessels (carriers or bunkering vessels) and LNG facilities (export/import, or bunkering). The remainder were corporate-purpose—e.g., financing to companies who own LNG infrastructure but where use of proceeds was for general corporate purposes (GCP). Corporate-purpose financing may contain capital used for company activities that are not related to maritime LNG, but there is not enough transparency to determine what proportion of the financing is related. That is because designating a loan or bond as GCP financing is the broadest and most meaningless way of identifying use of proceeds because GCP can refer to any activity within the company. Without transparency, it is difficult to know how much of the estimated US$128 billion in financing to companies with LNG infrastructure was used to support maritime LNG expansion.

Among the top 10 banks, transactions for corporate-purpose bonds where the use of proceeds was unspecified (i.e., GCP financing) were slightly more common than across all banks. This is because these top banks specialize in billion-dollar bond underwriting deals for major oil and gas multinationals. For example, Citi is the top bank directly financing major oil and gas companies, including Qatar Petroleum, Equinor, Petronas, BP, and Chevron. To put it in perspective, while Citi is sixth in the top 10 in terms of LNG financing, with an estimated US$13.4 billion, a whopping 86% of that money—or an estimated US$11.5 billion—is in corporate-purpose GCP bonds. The impact of so much financing being in corporate-purpose bonds is that while banks claim to use their leverage with oil and gas companies to improve the companies' climate targets, banks do not always have that leverage to wield. In bond transactions, a bank's leverage over its client ends when the bonds are issued. This differs from loans, where the bank holds a relationship with the client for the lifetime of the loan. Additionally, if a bank is just one of a number of banks brokering the deal (syndication), they are operating at a disadvantage when it comes to enforcing climate commitments since the client can seek the deal they want from a number of competing banks. Of the 175 deals reviewed for this analysis, the majority of them were syndicated.

The overall effect is that banks may struggle to apply due diligence for their climate commitments over the uneven landscape of their financing because of differences like loans vs. bonds, syndicated versus bilateral, and project versus corporate financing, which shift the deal structure and change how deals are reviewed against climate, nature, and human rights policies. As a result, banks may lack the leverage needed to implement real change in the GHG emissions of their LNG clients. Furthermore, they may be supplying the financing to fuel LNG expansion without having a clear enough idea about how proceeds will be spent and therefore lack clarity on exactly how their financing is impacting the climate.

Rank	Company	Project	Corporate	Total
1	**Venture Global LNG**	$31,228	$13,605	$44,833
2	**Cheniere Energy Partners**	$20,218	$13,782	$34,000
3	**BP**		$19,860	$19,860
4	**Equinor**		$14,361	$14,361
5	**Global Infrastructure Partners**	$13,450		$13,450
6	**TotalEnergies**	$6,330	$7,025	$13,355
7	**Qatar Petroleum**		$12,500	$12,500
8	**Freeport LNG Development**	$12,287		$12,287
9	**Energy Transfer**	$10,900		$10,900
10	**PETRONAS**		$10,600	$10,600
11	**Sempra Energy**	$7,606	$500	$8,106
12	**Sinopec**		$6,000	$6,000
13	**ConocoPhillips**	$5,676		$5,676
14	**GasLog**	$4,890	$519	$5,408
15	**Stonepeak**	$4,413		$4,413
16	**Chevron**		$4,000	$4,000
17	**NextDecade**	$3,785		$3,785
18	**Mubadala Investment Company**	$3,723		$3,723
19	**Government of Singapore Investment Corporation**	$3,723		$3,723
20	**Fortress Transportation and Infrastructure Investors**		$3,400	$3,400

Table 4. Top 20 LNG companies and the transaction value of their project-related and corporate-purpose financing over the past 5 years (in USD million), ranked by project-related financing.

MARITIME LNG COMPANIES

Table 4 ranks the top 20 companies by transaction value (in USD million) for project-related and corporate-purpose financing. Notably, Venture Global LNG, the project sponsor for Plaquemines LNG export terminal, tops the ranking. Of the estimated total transaction value of US$44.8 billion financed to Venture Global LNG, almost half (49%) is for the Plaquemines LNG terminal in Louisiana. The company ranked second in this list, Cheniere Energy Partners, has a total transaction value for LNG financing of US$34 billion, of which 40% is dedicated to the Corpus Christi LNG terminal project.

THE FALLACY OF "BRIDGE FUELS"

Each of the top banks has been involved in key LNG finance deals that have led to expansion in the sector, including for LNG terminals, processing plants, and vessels. In many of these deals, LNG is touted as a bridge fuel that will help economies make the energy transition required to avoid the catastrophic impacts of climate change. However, in real life, investments in bridge fuels such as LNG can crowd out financing for renewable energy solutions while continuing to prop up the fossil fuel industry. **As the next five examples of key financing by the top banks highlight, LNG projects are expensive, cause climate pollution, harm the health of local communities, and violate peoples' human rights.**

1. BRIDGE FUELS SHOULD NOT NEED EXPENSIVE CLIMATE SOLUTIONS.

MUFG is a key player in a risky LNG export terminal project on the Rio Grande in Texas, directly loaning an estimated US$1.83 billion to the project in the past 2 years. The project, costing an estimated US$18 billion,[62] is mired in allegations of Indigenous rights violations, community health impacts, and ecosystem damage, not to mention the climate risks from the increase in emissions.[63] Despite this, in July 2023, MUFG loaned **NextDecade** and partners over US$1.2 billion (est.) for their Rio Grande LNG project (Phase 1) in four loans. The bank also is responsible for an estimated US $350 million in bond underwriting for the project. In 2024, MUFG was also the sole lender on two more deals for the project—a credit facility worth an estimated US$62.5 million and a commercial bond worth an estimated US$190 million.[64] In August 2024, the project lost its U.S. Federal Energy Regulatory Commission development approvals for the LNG export facility.[65] The court cited the lack of development of NextDecade's carbon capture and storage (CCS) plan in its ruling that the authorizations could not proceed. The CCS plan was part of the company's effort to show that the LNG project could be environmentally sustainable, although CCS technology is unproven in reducing emissions. NextDecade abruptly shelved its CCS plans after the ruling.[66] Despite this, NextDecade's website still claims, as of September 2024, "Rio Grande LNG is the FIRST AND ONLY U.S. LNG project offering CO_2 emissions reduction of more than 90 percent via proposed carbon capture and storage – capturing and permanently storing more than 5 million metric tons of CO 2 per year, equivalent to removing more than one million vehicles from the road annually."[67] As ruled by the courts, the CCS plans were never properly in place, but the company touted CCS anyway to greenwash their project.

2. BRIDGE FUELS SHOULD NOT CAUSE CLIMATE-RELATED DEATHS.

JPMC has been pivotal in the financing behind the Plaquemines LNG export terminal project on the Gulf Coast of Louisiana, which is already partially operational. Over two project phases, **Venture Global LNG** has borrowed over US$18 billion (est.) in syndicated loans for the project.[68] Over 3 years, from 2021 to 2023, JPMC directly provided financing worth an estimated US$1.15 billion to the project. The project is estimated to process up to 24 million tons of LNG per year for export, which would increase emissions by 8 million tons of GHGs per year and create more than 3,000 ton per year of criteria air pollutants in the region.[69] The emissions from the LNG project are equivalent to building two new coal-fired power plants and would cause an estimated 1,669 climate-related deaths from those emissions.[70]

3. BRIDGE FUELS SHOULD NOT COST MORE THAN RENEWABLE ENERGY.

Mizuho has been instrumental in refinancing the Ichthys LNG Project. Between 2020 and 2022, the bank loaned **INPEX Group** and other project sponsors an estimated US$2.9 billion to refinance the offshore LNG project off the coast of Western Australia and its processing and export facilities near Darwin. Ichthys is one of the most expensive LNG projects in history, costing an estimated US$45 billion so far.[71] By comparison, all U.S. renewable energy projects in 2023 drew investment valued at US$92.9 billion—or just over twice as much as it cost to build Ichthys.[72] LNG projects like Ichthys cost tens of billions of dollars, and they are an expensive draw on investments in renewables.

Likewise, **Sumitomo Mitsui** functions as a Bond Arranger and MLA for the 2022 refinancing of the Dunkirk LNG terminal in France, which does STS and PTS LNG bunkering. The bank contributed an estimated US$76 million to the deal, worth an estimated US$873 million to the project sponsors: **Fluxys**, IPM Group, and Axa Investment Management. The terminal, considered small-scale for LNG, has cost over US$1 billion in infrastructure costs so far.[73] By comparison, small-scale electric shipping is not as costly. The world's first all-electric carrier (with a capacity of 120 TEUs) comes in at US$25 million to build.[74]

4. BRIDGE FUELS SHOULD NOT CAUSE WHOLE SECTORS TO GET LOCKED INTO FOSSIL FUELS.

Citi is a top financier of financing linked to LNG tankers, LNG-fueled cargo ships, and LNG bunkering vessels. Across all banks, an estimated US$11.2 billion in financing over the past 5 years is linked to LNG vessels. An estimated US$639 million is attributed directly to Citi. For example, Citi contributed an estimated US$200 million to a US$2.8 billion revolving credit facility for **Gaslog**, a major supplier of LNG container ships. The price tag on the average LNG shipping vessel is US$260 million per boat,[75] while LNG bunkering vessels (for STS fueling) cost a round US$50 million. [76] Similarly, Mizuho is a major lender for JAX LNG—a Florida-based LNG processing facility with storage and bunkering capabilities owned by **Seaside LNG** and Pivotal LNG. The bank loaned an estimated US$26 million in a US$137 million dollar deal in 2021 that expanded the facility and doubled its LNG storage capacity. JAX LNG has a fleet of three LNG bunkering barges and two tugs. A company affiliated with Seaside LNG, Tortuga Fueling and Bunkering, borrowed an estimated US$181 million in 2024 in a deal where **ING** was the leading bank. JAX LNG recently refueled a CMA-CGM LNG ship in the Port of Savannah.[77] With billions of dollars connected to new vessel financing, banks are facilitating a major technological lock-in in the shipping industry and tying maritime shipping to fossil fuels for the next 20 to 30 years—the average lifespan of a vessel. There is an opportunity now to skip LNG "bridge fuel" and instead invest in the build-out of infrastructure for zero-emissions shipping.

5. BRIDGE FUELS SHOULD NOT CAUSE HUMAN RIGHTS ABUSES.

Sumitomo Mitsui is a major financier for the Mozambique LNG processing facility and export terminal and Area One offshore LNG drilling project. Sumitomo Mitsui and other financial institutions loaned the project an estimated US$22.6 billion in primary financing, with the bank directly responsible for an estimated US$770 million.[78] **TotalEnergies** is the main project sponsor. In 2021, it declared force majeure after armed conflict erupted in the region. In 2024, the company secured US$14.9 billion, mostly from public banks, to reopen the project.[79] However, local people displaced by the LNG terminal and processing plant claim that the militarization of the region in response to the conflict has led to human rights abuses by the military forces sent there to protect the LNG site.[80] They also claim that TotalEnergies has not fairly compensated them for relocating from their farms to make way for the project.[81] Any energy product that is claimed as a climate solution must align with climate justice and respect for human rights and not simply be another page out of the fossil fuel playbook.

FINANCING DOES NOT ALIGN WITH BANKS' CLIMATE COMMITMENTS

All of the top 10 banks facilitating funding for maritime LNG projects, export terminals, and companies have signed onto climate finance initiatives—many of them parties to multiple initiatives—that should impact their involvement in fossil gas shipping expansion. However, Table 5 illustrates that the top bank, MUFG, is a signatory to all five of the commitments reviewed in this analysis and still has a robust financial portfolio of LNG projects. Additionally, Citi is a signatory to all of the commitments, but it is the top bank for LNG financing for GCP bonds to companies with major LNG holdings.

Bank	Climate Bonds Initiative	Poseidon Principles	Principles for Responsible Banking	Net Zero Banking Alliance	Partnership for Carbon Accounting Financials
Bank of America	No	No	No	Yes	Yes
Citi	Yes	Yes	Yes	Yes	Yes
Goldman Sachs	No	No	Yes	Yes	No
HSBC Group	Yes	No	No	Yes	Yes
JP Morgan Chase	No	No	No	Yes	No
Mitsubishi (MUFG)	Yes	Yes	Yes	Yes	Yes
Mizuho	Yes	No	Yes	Yes	No
RBC	Yes	No	No	Yes	Yes
Santander	No	No	Yes	Yes	Yes
Sumitomo Mitsui	No	Yes	Yes	Yes	Yes

TABLE 5 Climate commitments of the top 10 banks[82]

THE POSEIDON PRINCIPLES

Three of the top 10 banks—MUFG, Citi, and Sumitomo Mitsui—are signatories to the Poseidon Principles. They have collectively financed an estimated US$45 billion in maritime LNG projects—for LNG terminals, ship fueling infrastructure, newbuild and/or retrofit vessels, companies engaged in maritime LNG expansions, and corporate use (general purposes, indebtedness, etc.) since the principles were signed.

Despite these actions, the introduction of these new targets set most Poseidon Principles signatories back on their goal of aligning with 1.5°C. Table 6 shows how alignment scores for four banks in this study that are signatories changed. Two banks had cargo vessel alignment scores that were aligned, but no banks had IMO GHG strategy alignment scores that were sufficient, even at the minimum level.

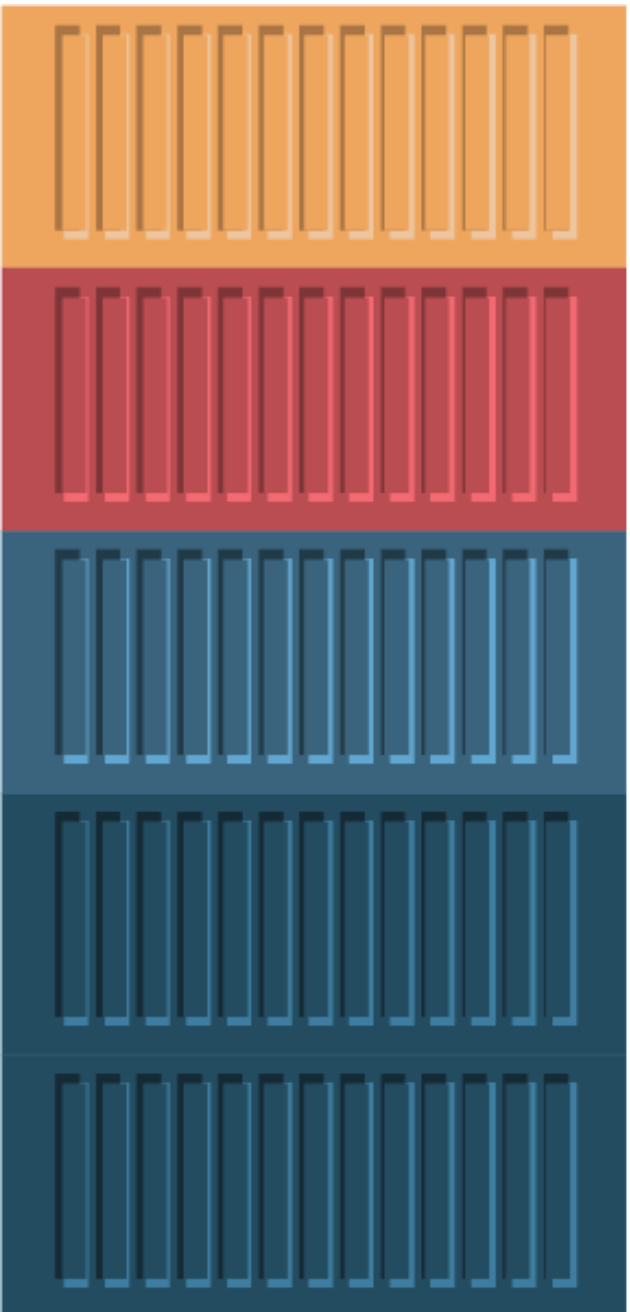
The Poseidon Principles do not explicitly address maritime LNG projects—the stated objective of the principles is to align banks' ship finance portfolios with climate targets.[83] The principles apply to vessel financing. This narrow definition of maritime finance enables signatories to exclude large categories of financing for maritime LNG (e.g., LNG export and import terminals and LNG ship fueling [bunkering] projects). Out of a total transaction value of US$335 billion, an estimated US$11.2 billion (3%) is project-related financing for LNG vessels. While this is likely an underestimate as it does not consider corporate-purpose financing that may go to investment in LNG vessels (due to a lack of transparency in the data), it is still a small proportion of the estimated total value of transactions related to maritime LNG. This suggests that the limited scope of the principles may not have their intended effect.

Bank	2023 Cargo Vessel Climate Alignment Score	Aligned?	2023 IMO GHG strategy climate alignment score		Aligned?
			Min	Striving	
Mitsubishi (MUFG)	+3.9%	No	26.20%	30.90%	No
Citi	+3.1%	No	33%	38%	No
Sumitomo Mitsui	-1.1%	Yes	26.60%	31.30%	No

TABLE 6 Comparison of cargo vessel and IMO GHG strategy climate alignment scores in terms of alignment with 1.5°C pathways for the three banks in the study that are Poseidon Principles signatories[84]

CONCLUSION

While international shipping is already one of the most polluting sectors in the world, maritime LNG significantly increases the sector's climate footprint. Banks can play a critical role in helping to decarbonize this sector. The top 10 banks financing the maritime LNG expansion, which represent only 5% of the over 160 banks engaged, are providing nearly half of the financing for this fossil-fueled expansion. These banks can also have an outsized impact on shifting capital toward zero-emission shipping solutions. Indeed, were these banks to put their climate commitments into action, the positive impact on efforts to decarbonize international shipping would be significant.



RECOMMENDATIONS FOR BANKS

1 Full accounting and transparency of financed and facilitated emissions in line with the Principles for Carbon Accounting Financials.

Banks that have not yet become signatories to the PCAF should endorse this climate finance initiative immediately. Banks should apply this comprehensive framework to investment portfolios and annually report emissions across sectors—including maritime finance. Maritime portfolio emissions accounting must include not only vessel finance (Poseidon Principles) but also bunkering infrastructure, corporate loans to companies engaged in maritime LNG expansion, and import/export terminals.

2 Exceed the IMO and Poseidon Principles framework to achieve a Paris-aligned maritime portfolio.

In order to achieve a 1.5°C-aligned vessel portfolio, banks must exceed the most ambitious targets set by the IMO.

3 No new financing for maritime LNG projects and companies.

Immediately commit to no new financing for LNG vessels and LNG bunkering infrastructure projects, as well as no new financing for companies engaged in the build-out of maritime LNG.

4 End existing investment in maritime LNG projects and companies.

Where possible, exit existing financing and investments for maritime LNG projects and infrastructure.

5 Redirect capital to support the zero-emissions vessel transition.

Leverage the significant power these banks possess to direct capital to zero-emission vessels, fuels, and infrastructure projects, both through direct financing and many of these banks' extensive experience in working with Export Credit Agencies to secure capital for zero emission vessel projects.

ANNEX 1. GLOSSARY OF TERMS

Table 7. Description of financial roles as explained and coded by IJGlobal[85]

A-I

TRANSACTION ROLE
Role Description

AWARDING AUTHORITY
The entity which awards a PPP contract

BOND ARRANGER
Allocated credit based on underwritten commitments; if underwritten values are not fully disclosed, allocations are made by dividing tranche debt equally among the Bond Arrangers.

CONSULTANT
A specialized service that aims to assist businesses in financing large-scale projects. It involves providing expert advice and guidance to clients in order to secure funding for their projects and ensure their successful completion

DEVELOPMENT BANK
IJ considers any non-commercial policy lender that has a mandate in only one jurisdiction and that has a single national government on its board as a Development Bank. IJ Includes Development Banks in its Development Finance Institution grouping of lenders, along with Multilaterals and ECAs.

DIVESTOR
The company is selling off a portion of assets, often to improve company value and obtain higher efficiency

ENVIRONMENTAL ADVISER
A firm that provides advisory services to the sponsor(s), lender(s) or government, which is critical to the financing of an infrastructure asset. For League Table purposes, IJGlobal allocates credit only to companies officially mandated on a project or transaction. A company providing ancillary, supplementary or very early-stage advisory will not be allocated credit.

ESG COORDINATOR
Support with analysing and tracking relevant industry policy positions across key topics of waste, resources, and embodied carbon

ESG RATING AGENCY
Rate the companies based on their ESG policies, systems and measures, and they gather from multiple sources including company's publication, Government data bank, media, NGOs or other stakeholders

EXPORT CREDIT AGENCY
An institution that lends money specifically to help support exporting of goods or services.

FINANCIAL ADVISER
- Allocated credit according to the full value of the transaction.
- A firm that provides advisory services to the sponsor(s), lender(s) or government, which is critical to the financing of an infrastructure asset. For League Table purposes, IJGlobal allocates credit only to companies officially mandated on a project or transaction. A company providing ancillary, supplementary or very early-stage advisory will not be allocated credit.

FUND
A sum of money or other resources whose principal or interest is set aside for a specific objective

INSURANCE ADVISER
- Allocated credit according to the full value of the transaction.
- A firm that provides advisory services to the sponsor(s), lender(s) or government, which is critical to the financing of an infrastructure asset. For League Table purposes, IJGlobal allocates credit only to companies officially mandated on a project or transaction. A company providing ancillary, supplementary or very early-stage advisory will not be allocated credit.

LEGAL ADVISER
- Allocated credit according to the full value of the transaction.
- A firm that provides advisory services to the sponsor(s), lender(s) or government, which is critical to the financing of an infrastructure asset. For League Table purposes, IJGlobal allocates credit only to companies officially mandated on a project or transaction. A company providing ancillary, supplementary or very early-stage advisory will not be allocated credit.

MLA
The lender (or lenders) responsible for debt origination and/or underwriting at financial close. Banks given the title MLA in general syndication more than 90 days post-financial close will not receive League Table credit.

MODEL AUDITOR
Allocated credit according to the full value of the transaction.

MULTILATERAL
IJ considers any non-commercial policy lender that has a mandate across more than one jurisdiction and more than one national government on its board as a Multilateral. IJ includes Multilateral entities in its Development Finance Institution grouping of lenders, along with Development Banks and ECAs.

O&M
Operations and Maintenance, refers to the functions, duties and labour associated with daily operations

OFFTAKER
Buyers of the resources produced by completed and operating projects

OTHER
Other

PROJECT MANAGEMENT ADVISER
A firm that provides advisory services to the sponsor(s), lender(s) or government, which is critical to the financing of an infrastructure asset. For League Table purposes, IJGlobal allocates credit only to companies officially mandated on a project or transaction. A company providing ancillary, supplementary or very early-stage advisory will not be allocated credit.

SPONSOR
Allocated credit as a proportion of the transaction equity in relation to the transaction value. If the sponsor's equity value is unknown, sponsors are allocated credit as an equal split of the transaction value. For reporting purposes, IJGlobal assigns the title Sponsor to a variety of roles:
- In project finance deals the Sponsor is the entity (or entities), public or private, which is the primary developer of a given project or portfolio of projects and is the borrower in all project financing deals. The Sponsor is the owner of the project SPV and makes equity contributions
- In corporate finance deals the Sponsor role is assigned to the borrower
- In acquisition deals the Sponsor is the buyer of assets/companies

STATE LENDER
A lender that is more than 50% owned by the state or state-owned entities.

SUPPLIER
The company supplying the equipment or raw material

TARGET
A company that is being acquired. All Company Acquisition transactions within the database are logged with a Target

TAX ADVISER
A firm that provides advisory services to the sponsor(s), lender(s) or government, which is critical to the financing of an infrastructure asset. For League Table purposes, IJGlobal allocates credit only to companies officially mandated on a project or transaction. A company providing ancillary, supplementary or very early-stage advisory will not be allocated credit.

TECHNICAL ADVISER
- Allocated credit according to the full value of the transaction.
- A company evaluating the feasibility of a project or financing related to a project. For the purposes of League Tables, the roles of independent engineer, market consultant and transmission consultant have technical adviser accreditation.

ANNEX 2. DEFINITIONS

The following definitions of maritime LNG, and project-related and corporate-purpose financing of maritime LNG, are used solely for the purposes of this study in order to best estimate the full extent of maritime LNG financing:

MARITIME LNG PROJECTS

A) LNG vessels, including LNG carriers and bunkering vessels, floating LNG bunkering terminals, and LNG-powered vessels

B) associated infrastructure such as LNG export terminals*, storage, liquefaction, and bunkering facilities

C) This does NOT include:

- **I.** LNG production, regasification or other infrastructure exclusively for land-based uses such as power generation or trucking
- **II.** pipelines, unless the pipelines are dedicated for maritime LNG use

** LNG export terminals are included because (a) the export process involves the use of LNG carriers, (b) such terminals commonly provide refueling/bunkering services, and (c) once the LNG is exported, all end uses are possible including for supplying LNG-powered vessels in the respective destination countries.*

PROJECT-RELATED FINANCING OF MARITIME LNG

A) Financing for maritime LNG-specific projects

B) Corporate financing for pure-play companies e.g. those set up exclusively for an LNG project

C) This does NOT include:

- **I.** transactions outside the relevant time period, such as if the financing occurred after a company disposed of its LNG assets

PURPOSE FINANCING OF MARITIME LNG

A) Financing, including for debt repayment or restructuring purposes, for:

- **I.** companies that own marine terminals that include LNG terminal(s) or storage facilities, even if that is not the primary focus of the company
- **II.** companies that provide bunkering services that include LNG bunkering, even if that is not the primary focus of the company
- **III.** fleet owners and shipbuilders that own or build LNG vessels, including LNG tankers, LNG bunkering vessels, and LNG-powered vessels.
- **IV.** major petroleum companies like Shell, BP, or TotalEnergies that are pushing for and/or expanding their maritime LNG operations
- **V.** companies that provide consulting or advisory services to any of the above

B) This does NOT include:

- **I.** fracking companies, even if we know they supply the LNG industry
- **II.** or other infrastructure exclusively for land-based uses such as power generation or trucking
- **III.** pipeline companies, unless the pipelines are dedicated to a maritime LNG use
- **IV.** port owners, even if there happens to be an LNG terminal in the port
- **V.** subsidiaries, if it is known that the specific subsidiary is not involved in maritime LNG transactions outside the relevant time period, such as if the financing occurred after a company disposed of its LNG assets

ANNEX 3. DIFFERENCES IN METHODOLOGY BETWEEN RELATED REPORTS

A previous study by Stand.earth Research Group[86] that explored Citi's liquefied natural gas (LNG) financing was based on different search terms in the IJGlobal database, namely "LNG" and "Oil & Gas." Researchers manually went through all "Oil & Gas" transactions to determine which ones were project-related and which were corporate-purpose for companies that engage in the maritime LNG sector. It was not feasible within the scope of this study to replicate the same search terms, given the size of the dataset and the number of banks involved. Furthermore, the previous study included, in total facilitated financing reported, transactions where Citi acted as a financial adviser. Again, for the purpose of this analysis, it was not possible to review all advisory roles for all banks. As a result, this study does not report on "total facilitated financing," only on the transaction value and league table allocations. For Citi, we estimate that this difference means that almost half of the deals included in the previous analysis are not included in this report.

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