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Solutions for Our Climate

° Report



Capital at the Helm

Financing Decisions and the Future of Shipping

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Solutions for Our Climate

Solutions for Our Climate(SFOC) is an independent policy research and advocacy group that aims to make emissions trajectories across Asia compatible with the Paris Agreement 1.5°C warming target.

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Executive Summary

Global ship finance totaled $680 billion USD as of December 2025. From arranging pre-delivery construction payments to the shipyard, to refinancing the balloon payment on an aging vessel, financiers retain significant leverage throughout the vessel's lifecycle. As ships ordered today can operate well into the 2040s and 2050, financing decisions made by public and private financial institutions today effectively lock in the fleet composition and associated emissions for decades to come.

Case studies show that the top 10 commercial bank creditors to the top 10 containership company groups' shipping-related entities lent a total of $24.0 billion USD in loans from 2016 to 2025. Within this amount, approximately $12.9 billion USD across 140 deals was identified as likely connected to vessel orders, while 86% of vessels ordered by these top ten container shipping companies in recent years were identified as only capable of fossil fuel-propulsion. In South Korea, public financial institutions provided $58.0 billion USD in loans and guarantees for vessel newbuilds from 2015 to 2026, 93% of which supported the construction of fossil-fuel-only-propelled newbuilds in domestic shipyards. These case studies show that public and private financial institutions are pouring billions of dollars to support the construction of fossil-fuel-only-propelled vessel newbuilds.

Despite tightening climate targets and regulations across maritime and financial governance, current measures focus on post-facto disclosure rather than prevention or restriction of financing, and gaps remain in coverage and enforceability. Strengthening due diligence criteria can redirect billions of dollars away from building fossil-fuel-only-propelled vessels that are incompatible with a net-zero future and strategically reshape the composition of today's orderbook, thereby supporting the maritime decarbonization transition.

1. Introduction

International shipping is entering a period of significant transition as pressure to decarbonize continues to build. With increasing regulatory and policy efforts to reduce greenhouse gas (GHG) emissions from the maritime sector, there has been growing investment in vessels capable of operating on non-fossil alternative fuels in recent years. Despite this momentum, the pace of transition remains slow. The gap between decarbonization ambition and actual fleet transition remains substantial, as the vast majority of vessels in the orderbook are still designed to run on conventional fossil fuels.

The United Nations Framework Convention on Climate Change (UNFCCC) and the Paris Agreement reiterate that policies and measures taken by Parties in minimizing causes and mitigating effects of climate change should "comprise all economic sectors."[1] However, shipping emissions are currently omitted in most nationally determined contribution (NDC) submissions, barring partial inclusion in the European Union (EU) NDC.[2] Beyond country-level and regional commitments, international shipping is regulated through the International Maritime Organization (IMO), the United Nations specialized agency responsible for establishing global standards for safety, security, and environmental performance in the maritime sector. Accordingly, decarbonization efforts in international shipping are governed by the IMO in addition to other international treaties and legal frameworks.

In 2023, the IMO adopted the Revised GHG Strategy, committing to reach net-zero GHG emissions from international shipping by or around 2050, with indicative check-point goals for 2030 (by at least 20%, striving for 30%) and 2040 (by at least 70%, striving for 80%) compared to 2008.[3] In April 2025 at the 83rd session of the IMO's Marine Environment Protection Committee (MEPC), the Net Zero Framework (NZF) was approved as key mid-term measures to achieve targets set out in the 2023 GHG Strategy.[4] The NZF aims to accelerate the uptake of zero- and near-zero emission (ZNZ) fuels and technologies by combining a global fuel standard with an economic measure. As defined in the NZF, ZNZ fuels have a GHG Fuel Intensity (GFI) of no more than 19.0 gCO_2eq/MJ, which is 80% lower than the 2008 industry average of 93.3 gCO_2eq/MJ.[5] Compliance will thus require a shift away from using

1 *United Nations Framework Convention on Climate Change*, May 9, 1992, 1771 U.N.T.S. 107, art. 3(3), https://unfccc.int/resource/ccsites/zimbab/conven/text/art03.htm.

2 Olivia Moyle, "Addressing the Glaring Gap in Climate Plans: International Aviation and Shipping Emissions," Opportunity Green, February 13, 2025, https://opportunitygreen.org/climate-law/insights/ndc-gap-international-aviation-shipping/.

3 International Maritime Organization, "IMO's work to cut GHG emissions from ships," accessed October 20, 2026, https://www.imo.org/en/mediacentre/hottopics/pages/cutting-ghg-emissions.aspx.

4 International Maritime Organization, "IMO Approves Net-Zero Regulations for Global Shipping," April 11, 2025, https://www.imo.org/en/mediacentre/pressbriefings/pages/imo-approves-netzero-regulations.aspx.

5 International Maritime Organization, "The IMO Net-Zero Framework – FAQs," accessed September 22, 2026, https://www.imo.org/en/mediacentre/hottopics/pages/faqs-the-imo-net-zero-framework.aspx.

fuels derived from fossil origins.

ZNZ fuels for shipping, such as green ammonia, green methanol, and green hydrogen, have different physical and combustion characteristics.[6] As such, adoption of ZNZ fuels requires either dedicated engines or dual-fuel engines capable of operating on both conventional and ZNZ fuels during the transition period. Regrettably, formal adoption of the NZF was deferred at the second Extraordinary Session of the MEPC (ES.2) in October 2025. The NZF is now expected to be considered again at the resumed MEPC ES.2 in December 2026, with the first reporting period beginning in 2029.

While the global IMO NZF remains under negotiation, regional regulations progressed. The EU advanced two complementary measures, the EU Emissions Trading System (EU ETS) and FuelEU Maritime, which place increasing pressure on shipowners to reduce GHG emissions from vessels calling at European ports. Since January 2024, the EU ETS began requiring shipping companies to purchase and surrender allowances for their reported GHG emissions. FuelEU Maritime complements the EU ETS by addressing the types of fuel used onboard ships rather than emissions alone. The regulation establishes progressively stricter limits on the lifecycle GHG intensity of energy used by vessels, allowing compliance through different fuels, energy sources, and operational strategies.

Together, these measures place a direct economic cost on higher-emitting ships before the advent of binding global regulations, reshaping the context in which newbuild investment decisions are made. While the pace and design of regulatory measures continue to evolve, the overall trajectory towards GHG emissions reduction remains clear.

In reaction to this policy direction, orders of vessel newbuilds capable of running on ZNZ fuels have grown. However, of newbuild orders of 5,000 GT or above from 2023 to date, ZNZ-capable vessels account for approximately 5%,[7] meaning the vast majority of ships being ordered can only run on fossil fuels. With global ship finance totaling roughly $680 billion USD as of December 2025,[8] the status quo orderbook composition implies that financial institutions continue to channel billions of dollars to sustain fossil-fuel-only-propelled vessel[9] newbuilds each year, oblivious to an increasingly stringent regulatory environment.

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6 International Maritime Organization, "IMO Framework on Life Cycle GHG Intensity of Marine Fuels (LCA)," accessed September 22, 2026, https://www.imo.org/en/ourwork/environment/pages/lifecycle-ghg---carbon-intensity-guidelines.aspx.

7 Analysis of Clarksons World Fleet Register data (downloaded on August 6, 2026).

8 Petrofin Research, "Key Developments and Growth in Global Ship Finance," July 2026, https://www.petrofin.gr/wp-content/uploads/2026/07/Petrofin-Global-Bank-Research-and-Petrofin-Index-of-Global-Ship-Finance-end-2025.pdf.

9 In this report, "fossil-fuel-only-propelled vessel" refers to a vessel equipped with engine systems that can only run on fossil fuels, including conventional heavy fuel oil (HFO) and/or other fossil fuels such as liquefied natural gas (LNG). As a result, these vessels are only capable of fossil fuel propulsion.

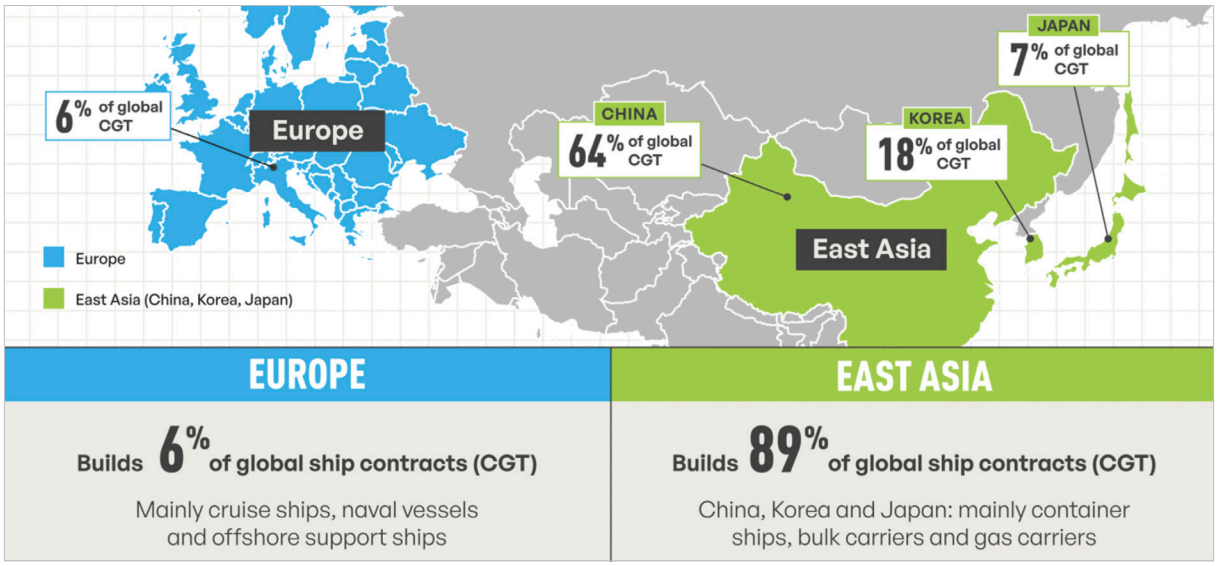
As newbuilds ordered today will operate well into the 2040s and 2050s, current investment decisions effectively lock the future composition of the global fleet. Understanding current ship financing patterns is therefore essential to assess whether capital is supporting and preparing for the sector's transition towards ZNZ-propelled shipping, or continuing to support fossil fuel dependency at sea.

2. Global Shipbuilding Industry

Section 2 briefly summarizes the global shipbuilding industry, mapping who and where the main competitors are and what their orderbooks look like. Understanding what is being built and characteristics of these assets provide useful context for the deep dive in Section 3 on the process and participants behind vessel newbuild investment decisions.

2.1 Market Overview

A few major players, primarily located in East Asia, dominate new vessel construction. Today, China, South Korea, and Japan are undisputed centers of asset origination, collectively accounting for approximately 90% of the global commercial vessel newbuilding by compensated gross tonnage (CGT).[10] China held the largest share of newbuild contracts in 2025 at approximately 64% by CGT, with South Korea and Japan following at 18% and 7%, respectively.[11]



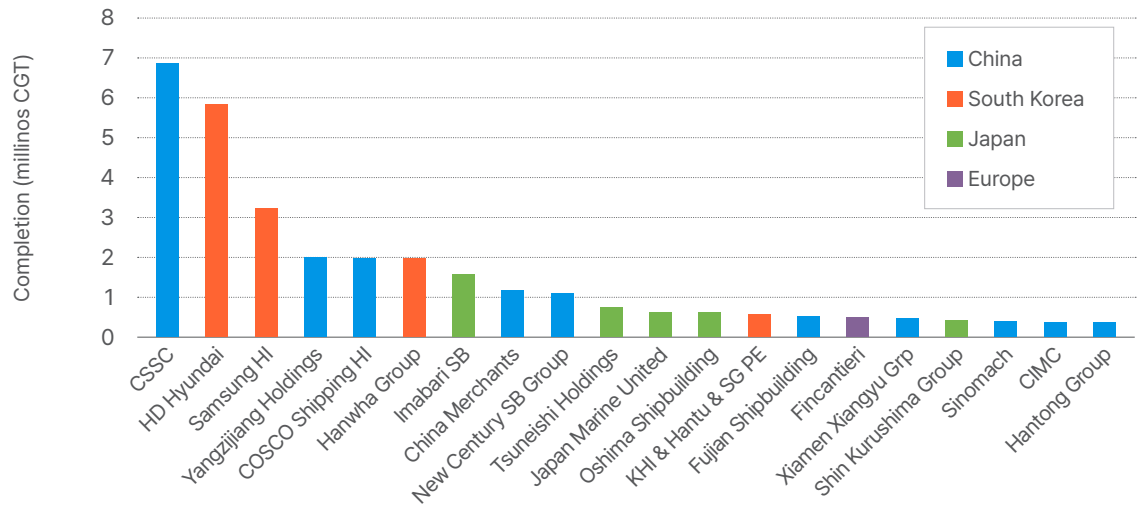
Furthermore, such national dominance is illustrated in the 2024 global shipbuilder rankings based on completion volumes. Among the top 20 shipbuilder groups, Chinese shipbuilders account for 10, South Korean for 4, and Japanese for 5. China State Shipbuilding Corporation (CSSC) leads the global market by a significant margin, with completions approaching 7 million CGT. South Korea's HD Hyundai and Samsung Heavy Industries follow in second and third place, having completed approximately 6 million

10 Compensated gross tonnage is a unit of measurement developed for measuring the level of shipbuilding output. It is calculated by applying a conversion factor to a vessel's gross registered tonnage, which reflects the amount of work required to build a ship.

11 Clarksons Research. WFR Dashboard Contracts by Builder Country/Region (CGT) in 2025.

and 3 million CGT, respectively.[12] Meanwhile, Japanese shipbuilders, led by Imabari Shipbuilding, maintain a consistent presence throughout the mid-to-lower tier of the top 20.[13]

[Figure 1] Top 20 Shipbuilder group globally (2024)



Source: Reconstructed from OECD, *Peer Review of the Japanese Shipbuilding Industry 2026*, based on World Fleet Register (WFR) data.

Despite the market concentration, countries such as Vietnam, Türkiye, and India are strengthening their shipbuilding industry capabilities through targeted investment in shipyard infrastructure, with efforts focused on specialized vessel construction and repair services.[14]

Meanwhile, European shipyards have taken a different approach to remaining competitive, shifting their focus toward high-value and technologically advanced segments, such as cruise ships, naval vessels, and offshore support ships. Among these, cruise ships represent roughly 65% of total European shipbuilding deliveries by CGT on average over the past decade.[15]

2.2 Orderbook Analysis by Fuel Type

As shipowners look to mitigate transition risks in response to tightening regulatory frameworks of the IMO and the EU, there has been an increase in global orders of vessels equipped with dual-fuel

12 Analysis of Clarksons World Fleet Register data.

13 OECD, *Peer Review of the Japanese Shipbuilding Industry 2026* (Paris: OECD Publishing, 2026), https://doi.org/10.1787/717ba40f-en.

14 Mina Tadros, Myo Zin Aung, Amin Nazemian, Amir Bordbar, Evangelos Boulougouris, and Marc Bonazountas, "Review of Current Regulations, Available Technologies, and Future Trends towards Green Shipbuilding Industry," *Ocean Engineering* 348 (2026): 124109, https://doi.org/10.1016/j.oceaneng.2025.124109.

15 Laurent Daniel, "OECD Shipbuilding Economies under Pressure as China Reshapes Global Competition," OECD, June 8, 2026, https://www.oecd.org/en/blogs/2026/06/oecd-shipbuilding-economies-under-pressure-as-china-reshapes-global-competition.html.

engines or described as "alternative fuel-ready."[16]

It is important to not conflate having dual-fuel engines with capability of running on ZNZs, as the ship may be equipped with dual-fuel engines that can run on two types of fossil fuels, such as HFO and LNG.[17] Consequently, being labeled as "alternative fuel-ready" does not enforce actual emission reductions in the short to medium term.[18] While vessels designated as "alternative fuel-ready" project an eco-friendly image to the market, this label merely means having reserved space on board where a theoretical ZNZ fuel tank or piping could be installed or retrofitted in the future; in practice, the ships are built to operate on conventional fossil fuels today.[19] This approach effectively postpones actual operational emission reductions.[20] Furthermore, retrofitting is expensive. To retrofit a container vessel can cost more than $30 million USD; on top of the cost of engine conversion, there are also opportunity costs as the vessel will be out of water for at least several months.[21]

Clarksons Research's 2025 Green Technology Tracker noted a massive uptake where "alternative fuel" orders represented 50% of all newbuild tonnage ordered in 2024, but further analysis reveals that those are in fact more orders of fossil-fuel-only-propelled vessels.[22] This apparent surge is heavily dominated by ships that run on LNG, a fossil fuel categorized as "alternative fuel," rather than ZNZ fuels; LNG-fueled ships account for 70% of such "alternative fuel" order tonnage in this calculation (excluding LNG carriers).[23]

A closer look the combined orderbooks of shipyards in China, South Korea, and Japan further reveals that approximately 93% of the number of vessels are still being built with engines only capable of running on fossil fuels.[24] Consequently, this orderbook composition means that despite growing commitments to net-zero alignment, commercial and public financial institutions continue to heavily capitalize vessels that will lock in fossil fuel consumption for the next several decades.

16 DNV, "Net-Zero Shipping: Key Findings from the Latest Maritime Forecast," October 10, 2025, https://www.dnv.com/expert-story/maritime-impact/net-zero-shipping/; Zoe Barber, "Tracking The Growing Alternative Fuel Capable Fleet," Clarksons, July 29, 2025, https://www.clarksons.net/wfr/News/Article/214065.

17 Lloyd's Register, "Financing the Next Round of Retrofits," March 2025, https://www.lr.org/en/knowledge/horizons/march-2025/financing-the-next-round-of-retrofits/.

18 Lloyd's Register, "Financing the Next Round of Retrofits."

19 Lloyd's Register, "Financing the Next Round of Retrofits."

20 Lloyd's Register, "Financing the Next Round of Retrofits."

21 Stamatis Bourboulis, Randall Krantz, and Lara Mouftier, "Alternative Fuels: Retrofitting Ship Engines," Global Maritime Forum, May 9, 2022, https://globalmaritimeforum.org/insight/alternative-fuels-retrofittingship-engines/.

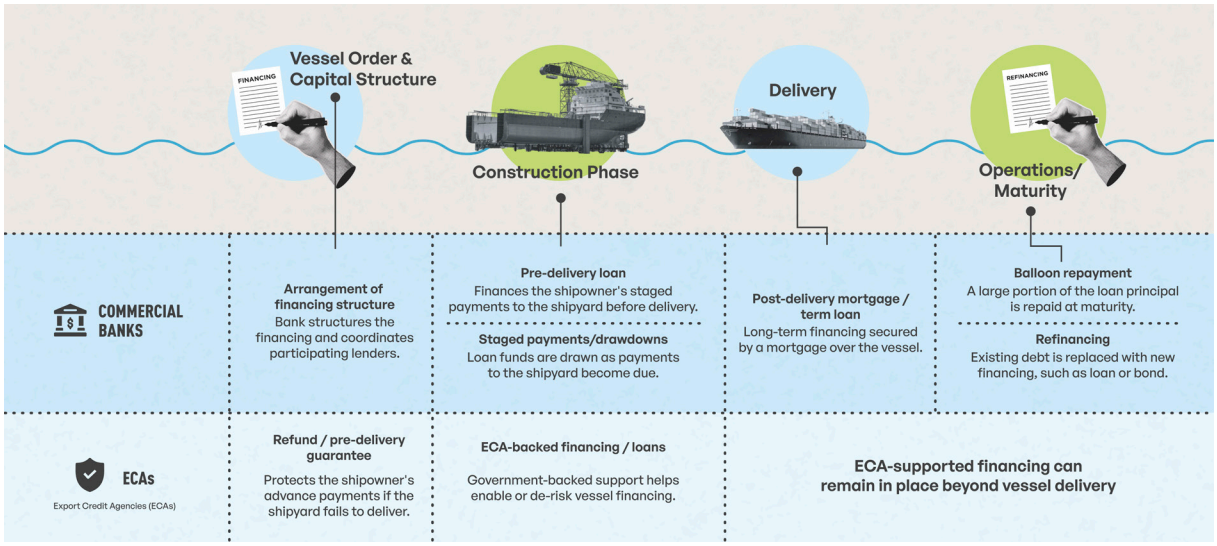
22 Stephen Gordon, "Green Technology Tracker: Record Investments In Alternative Fuel," Clarksons Research, January 2, 2025, https://insights.clarksons.net/green-technology-tracker-record-investments-in-alternative-fuel/.

23 Gordon, "Green Technology Tracker."

24 Clarksons Research, Orderbook in number of ships as of 25 July 2025 cited in OECD, *Peer Review of the Japanese Shipbuilding Industry 2026*.

3. Financing Vessel Newbuilds

3.1 Needs for External Finance



Investing in a newbuild vessel requires significant financial resources, manpower, and other resources over an extended period.[25] Shipbuilding is capital intensive and is essentially a made-to-order industry. A single vessel can cost tens of millions of dollars.[26] Often, shipowners order several new vessels at once, which multiplies the total cost of the investment.[27] Construction itself takes one to several years, and once delivered, a vessel is generally expected to operate for 20 to 30 years.[28] This combination of significant capital commitment, multi-year construction period, and long operating life means that few shipowners can fund a newbuild from cash flow or equity alone.[29] Securing external finance is therefore often a precondition for ordering new vessels.[30]

A newbuild order typically arises from a shipping company's need for additional or replacement tonnage.[31] At a relatively early stage, usually when the shipbuilding contract is drafted, the shipowner must decide on the vessel's type, size, and propulsion technology, which will determine the ship's

25 Tadros et al., "Review of Current Regulations," 124109.

26 UNCTAD, "Review of Maritime Transport 2025," https://unctad.org/system/files/official-document/rmt2025_en.pdf.

27 Charles R. Cushing, "Shipbuilding Finance," in *The International Handbook of Shipping Finance*, ed. Manolis G Kavussanos and Ilias D Visvikis (London: Palgrave Macmillan, 2016).

28 Martin Stopford, "The Organization of the Shipping Market," *Maritime Economics*, 3rd ed. (London: Routledge, 2009).

29 Cushing, "Shipbuilding Finance."

30 Stopford, "Financing Ships and Shipping Companies."

31 Stopford, "The Economics of Merchant Shipbuilding and Scrapping."

capital cost and emissions profile throughout its operating life.[32]

The vessel's technical specifications, including the exact type of propulsion engine, are legally locked in when the shipbuilding contract is signed. The initial installment immediately operationalizes this contract, providing the shipyard with the capital to place non-refundable orders for the engine.[33] Once the contract is signed and this initial capital is transferred, reversing the choice of propulsion becomes practically and economically impossible due to massive cancellation penalties.[34]

Because these choices are locked in years before the vessel enters service, they require careful consideration at the investment stage.[35] As **financing decisions can decisively enable or disable the construction of new vessels, they are crucial in the context of the maritime energy transition.**[36]

3.2 Critical Role of Financial Institutions throughout the Vessel Lifecycle

3.2.1 Pre-Delivery Financing Arrangements

The financing timeline for newbuild projects is divided into pre-delivery and post-delivery stages. Pre-delivery financing is structured to fund the construction payments required by the shipyard before the vessel is physically delivered. Although the shipbuilding contract is legally between the shipowner and the shipyard, the majority of pre-delivery installments are ultimately funded by the shipowner's lenders.[37]

However, advancing millions of dollars for an asset that has not yet been fully built carries significant risk. To mitigate risks of shipyard insolvency, a Refund Guarantee (RG) is utilized. An RG is a financial instrument issued by a third-party financial institution, typically a commercial bank or export credit agency (ECA) on behalf of the shipyard, that guarantees the repayment of pre-delivery installments to the shipowner and its lenders in the event that the shipyard fails to deliver the vessel or files for bankruptcy.[38]

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32 BIMCO, *NEWBUILDCON*, Part I Box 4 and Part II Clause 2, https://www.bimco.org/contractual-affairs/bimco-contracts/contracts/newbuildcon/.

33 Stopford, "Financing Ships and Shipping Companies."

34 BIMCO, *NEWBUILDCON*, Part II Clause 24.

35 UNCTAD, "Review of Maritime Transport 2023," https://unctad.org/system/files/official-document/rmt2023_en.pdf.

36 Poseidon Principles, "2023 Annual Disclosure Report," https://www.poseidonprinciples.org/finance/wp-content/uploads/2023/12/Poseidon-Principles-2023-Annual-Disclosure-Report.pdf.

37 Stopford, "Financing Ships and Shipping Companies."

38 Cushing, "Shipbuilding Finance."

The RG provides the necessary security for the shipowner and its lenders to advance capital,[39] which the shipyard utilizes to procure raw materials and fund the construction process.[40] In return, the issuing third-party charges the shipyard a guarantee fee, priced based on the shipyard's creditworthiness.[41] Furthermore, under standard industry frameworks, the shipowner retains the legal right to terminate the contract if the shipyard fails to provide a valid RG arrangement before the first installment.

As such, the RG is often regarded as the financial cornerstone of a shipbuilding project,[42] and is universally mandated as collateral in pre-delivery loan agreements.[43] Consequently, initiating a newbuild project is practically impossible without such guarantees from financial institutions, demonstrating the power that financiers wield in enabling vessel constructions.[44]

3.2.2 Delivery and Post-Delivery Financing Arrangements

Upon the formal delivery of the vessel, the shipyard would have received full payment for the vessel's construction cost. Post-delivery loan facilities are thus arranged by financial institutions to repay and refinance the shipowner's short-term, pre-delivery construction debt.[45]

Similar to a traditional home mortgage, a "first preferred ship mortgage" is registered over the newly delivered vessel.[46] This way, the bank's loan is secured with a physical asset, granting the lender the legal right to seize and sell the ship if the owner defaults on payments.[47] Post-delivery term loans typically provide a leverage of 50% to 80% of the vessel's appraised market value.[48] The maturity tenor of these mortgage-backed loans is generally 5 to 10 years, as financiers prefer not to tie up capital for extended periods.[49]

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39 Cushing, "Shipbuilding Finance."

40 Stopford, "Financing Ships and Shipping Companies."

41 Fotis Giannakoulis, "Overview of Shipping Finance," in *The International Handbook of Shipping Finance*, ed. Manolis G Kavussanos and Ilias D Visvikis (London: Palgrave Macmillan, 2016).

42 BIMCO, "Refund Guarantee for Shipbuilding Contracts," accessed October 4, 2026, https://www.bimco.org/contractual-affairs/bimco-contracts/contracts/refund-guarantee-for-shipbuilding-contracts/.

43 Sang Man Kim, "Why Is a Refund Guarantee Independent from a Shipbuilding Contract?," *International Journal of Economic Research* 15, no. 2 (2018): 571-82.

44 BIMCO, *NEWBUILDCON*, Part II Clause 14(b).

45 Stopford, "Financing Ships and Shipping Companies."

46 Giannakoulis, "Overview of Shipping Finance."

47 George Paleokrassas, "Debt Financing in Shipping," in *The International Handbook of Shipping Finance*, ed. Manolis G Kavussanos and Ilias D Visvikis (London: Palgrave Macmillan, 2016); Simon D. Norton and Claudio Chiste, "Legal Aspects of Ship Mortgages," in *The International Handbook of Shipping Finance*, ed. Manolis G Kavussanos and Ilias D Visvikis (London: Palgrave Macmillan, 2016).

48 Giannakoulis, "Overview of Shipping Finance."

49 Giannakoulis, "Overview of Shipping Finance."

To ensure manageable debt service, financial institutions often arrange spread-out repayment schedules for shipowners over a longer period, usually 15 years based on a vessel's average economic life of 25 years.[50] While the loan agreement would expire in 5 to 10 years, the shipowner's principal balance remains due when the loan matures. This large lump sum is known as a balloon payment.[51] Since shipowners are rarely able to pay off this balance out of pocket, financial institutions typically handle the balloon payment by providing an additional new loan to cover the remaining debt of the aging vessel.[52]

Given the extended repayment structure, lenders maintain strict control over their risk exposure throughout the lifespan of the loan, closely monitoring the market value of vessels through financial covenants.[53] This means that **if a fossil-fuel-only-propelled ship loses its market value due to tightening environmental and climate regulations, the shipowner may be legally required to repay the loan early.**[54] As such, financial institutions can exert lasting influence over the shipowner throughout the vessel's lifespan.

3.3 Additional Financing Arrangements

Financial institutions also play multiple additional roles to help shipowners diversify their capital structures and fill funding gaps. Understanding these alternative arrangements reveals a broader network of financial institutions involved in the maritime energy transition.

- **Export Credit Agencies (ECAs):**[55] ECAs provide foreign shipowners with direct loans or guarantees, making it much cheaper and less risky to build new ships. ECA financing mechanisms is explored in full description in Section 4.2.
- **Syndicated Loans:**[56] For massive newbuilding programs or large-scale fleet acquisitions exceeding a single bank's credit limit, syndicated loans are utilized. Multiple banks team up, with one or more lead banks organizing the deal and recruiting other banks to share the massive cost and risk.

50 Giannakoulis, "Overview of Shipping Finance."

51 Stopford, "Financing Ships and Shipping Companies."

52 Giannakoulis, "Overview of Shipping Finance."

53 Watson Farley & Williams, "Security Maintenance Clauses in Ship Finance Transactions: Are They Enforceable?" July 2019, https://www.wfw.com/wp-content/uploads/2019/08/WFW-Article-Security-maintenance-clauses-in-ship-finance-transactions-are-they-enforceable.pdf.

54 Giannakoulis, "Overview of Shipping Finance."

55 Ioannis Alexopoulos and Nikos Stratis, "Structured Finance in Shipping," in *The International Handbook of Shipping Finance*, ed. Manolis G Kavussanos and Ilias D Visvikis (London: Palgrave Macmillan, 2016).

56 Giannakoulis, "Overview of Shipping Finance"; Cushing, "Shipbuilding Finance."

- **Mezzanine Financing:**[57] Regular banks usually lend only 50% to 80% of a ship's price. To cover the remaining cost without relying on equity, shipowners turn to mezzanine financing. Mezzanine financing is a type of loan that ranks below the bank loan but above equity. As such, mezzanine lenders take on a much higher risk. If the shipping company goes bankrupt, they are paid back only after the main bank is repaid in full. To compensate for this high risk, they charge much higher interest rates or demand shares in the company.
- **Corporate and High-Yield Bonds:**[58] Instead of borrowing from banks, shipowners can also issue bonds to large institutional investors. This is highly attractive to shipowners because they often only have to pay the interest during the term and repay the entire principal in one lump sum at maturity, keeping their cash free in the short term. Financially weaker shipping companies with lower credit ratings issue high-yield bonds which offer higher interest rates to attract investors.
- **Leasing Companies:**[59] Leasing separates who uses the vessel from who actually owns it. A financial company (the lessor) buys the ship and rents it to the shipping company for a set period.

57 Cushing, "Shipbuilding Finance"; George Paleokrassas, "Debt Financing in Shipping."

58 Giannakoulis, "Overview of Shipping Finance"; Cushing, "Shipbuilding Finance"; Stopford, "Financing Ships and Shipping Companies."

59 Cushing, "Shipbuilding Finance"; Alexopoulos and Stratis, "Structured Finance in Shipping"; Stopford, "Financing Ships and Shipping Companies."

4. Mapping the Ship Finance Landscape

Petrofin Research estimates that global ship finance totaled at approximately $680 billion USD as of December 2025, of which approximately $425 billion USD, or 63%, are global bank lending. Meanwhile, non-bank lending, such as export financing and leasing, have grown across all sectors and can now directly compete with banks, especially for the financing of newbuilds.[60] Building upon ship financing mechanisms outlined in Section 3, Section 4 provides a closer look at the roles and governance of lending practices provided by commercial banks and ECAs. Databased estimates and case studies further illustrate the scale of financing behind vessel newbuilds, as well as the translational nature of ship finance.

4.1 Commercial Banks

4.1.1 Functions and Financing Flows

Commercial banks have traditionally been the most important source of capital for newbuild ship financing, primarily as providers of debt capital to shipowners, shipping companies, and, in some cases, shipyards. Their financing is commonly structured as either bilateral or syndicated loans.

In **bilateral lending**, a single bank provides financing directly to the borrower. These transactions are often less transparent, with terms and volumes not always publicly disclosed. Unlike syndicated loans involving many institutions or publicly traded bonds, where transaction information is likely to be captured by specialist databases, bilateral loans are substantially harder to track unless the borrower has a separate disclosure obligation. This makes it difficult to assess the full scale of commercial bank exposure to newbuild shipping.

As briefly mentioned in Section 3, a **syndicated loan** is a large-scale loan jointly provided by several banks to minimize individual risk of investing in large newbuild projects. Therefore, syndicated loans are beneficial for financing high-value assets such as ultra-large container ships, LNG carriers, and offshore support vessels.

Usually, the transaction is coordinated by one or more lead arrangers who structure the facility, negotiate terms, coordinate due diligence, and distribute portions of the loan to participating lenders. The lenders provide the debt capital and share credit exposure to the borrower.

60 Petrofin Research, "Key Developments and Growth in Global Ship Finance."

In a syndicated loan, a bank may act simultaneously as a lender, arranger, and bookrunner, while other participating banks may provide only a portion of the loan. The total value of a transaction associated with a particular bank should therefore not automatically be interpreted as that bank's individual lending exposure.[61]

Role	Description	Relevant financing
Lender	Provides debt capital and holds credit exposure to the borrower	Bilateral loans, syndicated loans
Arranger	Structures and coordinates the financing and its key terms	Syndicated loans, bonds
Bookrunner	Manages syndication or placement and allocation among lenders or investors	Syndicated loans, bonds
Underwriter	Commits to financing and assumes the risk that it cannot be fully syndicated or placed	Syndicated loans, bonds
Facility Agent	Administers the facility after closing, including payments, notices and communication between borrower and lenders	Syndicated loans

Beyond direct lending, commercial banks also support shipping companies' access to capital markets. While they are not typically direct equity providers, like investors or public funds, banks can act as arrangers or underwriters for **bond issuances** to raise capital from institutional and other investors. In contrast to traditional loans, bonds provide access to a broader pool of investors and offer longer-term financing, allowing shipowners to diversify their sources of capital.

Additionally, commercial banks are also able to provide shorter-term financing, such as **revolving credit facilities**. These arrangements give shipowners flexible access to a pre-agreed maximum amount of funds that can be drawn, repaid, and redrawn as needed, supporting short-term cashflow and operational needs alongside longer-term vessel-financing.[62]

While commercial banks are primarily providers of debt capital, they can also help shipping companies seek financing options on the equity markets. Banks can act as bookrunners and underwriters for **share issuance** that enables institutional and individual investors to purchase shares of a shipping company.[63]

61 Amir Sufi, "Information Asymmetry and Financing Arrangements: Evidence from Syndicated Loans." *Journal of Finance* 62, no. 2 (2007), 629-668.

62 Paleokrassas, "Debt Financing in Shipping."

63 Jeffrey Pribor and Cecilie Skajem Lind, "Public and Private Equity Markets," in *The International Handbook of Shipping Finance*, ed. Manolis G Kavussanos and Ilias D Visvikis (London: Palgrave Macmillan, 2016).

Overall, commercial banks bring specialized expertise and play a significant role in ship finance. Transactions usually require sector-specific knowledge, which banks develop over time, and long-term relationships with shipowners enable banks to make better assessments on a shipowner's creditworthiness. Banks further examine the vessel's value as collateral itself, including the specific vessel type, freight-market conditions, and charter arrangements when assessing repayment risks. As newbuild loans extend over a long period of time, banks need to maintain up-to-date expertise to keep assessing changes in shipping regulations, technologies, and vessel competitiveness over the life of the loan.

According to Petrofin Research, as of December 2025, global bank lending to ship finance totaled $425 billion USD; the Top 40 banks in ship finance provided an estimated $300.6 billion USD.[64] While these figures are useful in gauging the total scale of financing provided to the shipping sector, it is important to note that Petrofin's calculations include both lending from commercial banks and other types of financial institutions, such as ECAs and development banks. Moreover, it is crucial to distinguish the various use of proceeds of the financed amounts. While some transactions are recorded explicitly for the purpose of ship finance, other types of use could include working capital, acquisition, and general corporate purposes. As such, approximating the amount of commercial bank lending that are directly linked to the financing of vessel newbuilds thus requires closer examination.

[Case Study 1: Commercial Bank Lending to the Containership Segment]

To investigate this further, the containership segment was selected as a case study. **According to data collected by Profundo,[65] the world's top 10 containership company groups[66] borrowed an estimated $54.6 billion USD in loans from creditors between January 2016 to December 2025, of which $46.3 billion USD (85%) was lent to their shipping-related entities.[67] Examining the financial institutions that provide these loans, the top 10 creditors to these entities, all commercial banks, provided $24.0 billion USD (52%) over this period.**

64 Petrofin Research, "Key Developments and Growth in Global Ship Finance."

65 Andrea Fernandez, *Financiers of the Shipping Sector: Dataset and Analysis* (Amsterdam: Profundo, September 2026). Please see Appendix for detailed methodology.

66 Alphaliner, "Top 100," accessed on August 10, 2026, https://alphaliner.axsmarine.com/PublicTop100/.

67 Borrowings of entities that focus on other businesses, such as port operation and aviation, are excluded in this calculation.

[Table 1] Total loans received by top 10 containership company groups' shipping-related entities (2016-2025)

Rank	Containership Company Groups	Loans for Shipping-Related Entities ($ billion USD)
1	MSC	13.326
2	Maersk	15.380
3	CMA CGM	6.487
4	COSCO	1.350
5	Hapag-Lloyd	5.170
6	ONE	1.063
7	Evergreen	0.838
8	HMM	2.005
9	Yang Ming	0.728
10	Zim	0
	Total	46.3

[Table 2] Top 10 loan creditors to shipping-related entities of the top 10 containership company groups (2016-2025)

Rank	Creditor	Loans to Top 10 Containership Company Groups' Shipping Related Entities ($ billion USD)
1	BNP Paribas	3.857
2	Santander	3.598
3	Société Générale	2.867
4	UniCredit	2.552
5	HSBC	2.489
6	Citi	2.195
7	ING	1.811
8	Crédit Agricole	1.710
9	Standard Chartered	1.660
10	Bank of America	1.222
	Total	24.0

Loans provided to shipping companies can be used for various purposes. To approximate the amount financed for vessel newbuilds, the use of proceeds noted for each loan was filtered and analyzed. Loans noted with "ship financing" and "shipping" as part of their use of proceeds were counted as

loans likely related to the order of vessels, while other labels, such as "general corporate purposes" and "working capital," were not counted. **An approximate $21.2 billion USD received by the top 10 containership company groups have been identified as loans corresponding to 282 deals that are likely related to the ordering of vessels. Within this total, an approximate $12.9 billion USD was provided by the top 10 creditors in loans corresponding to 140.**

As section 4.1.1 noted, in addition to loans, commercial banks also provide other forms of financing arrangements to shipping companies, including revolving credit facilities, bonds issuance, and share issuance. For example, Profundo estimates that BNP Paribas' ship finance portfolio adds up to $29.1 billion USD, comprising of 70% corporate loans, 17% revolving credit facilities, 11% bond issuance, and 2% share issuance.

While financing provided by commercial banks supports various activities other than vessel construction, the scale of lending amounts uncovered in this case study nevertheless exemplifies the importance of commercial banks to shipping companies. The amount of financing provided by commercial banks is especially noteworthy when factoring in general newbuild order patterns.

Of the 737 vessel newbuilds ordered by the above top 10 containership companies, 636 vessel newbuilds, or 86%, are only capable of fossil fuel-propulsion.[68] As these newbuilds have a lifespan of 20 to 30 years, financing decisions made by commercial banks today directly translate to lock-in emissions for decades to come, furthering the shipping se ctor's fossil fuel dependency despite tightening climate regulations.

4.1.2 Governance

As commercial banks play a central role in determining which vessels receive financing, a growing number of frameworks have emerged to integrate climate considerations into financial decision-making. This section explores key voluntary and mandatory measures that jointly exerts growing pressure on commercial banks to disclose and improve their financing practices.

Non-Binding Principles and Initiatives

The governance of ship finance has largely evolved through voluntary industry initiatives before being incorporated into legally binding regulations. These initiatives not only built a foundation of common

68 Downloaded from Clarksons World Fleet Register (WFR) on August 13, 2026, with range of available dates noted as from January 20, 2020 to July 31, 2026.

methodologies for financial institutions but also supported commercial banks in preparing for future regulatory requirements.

Many of these initiatives originate from the **United Nations Environment Programme Finance Initiative** (UNEP FI), a partnership between the UN and the global financial sector. The initiative aims to mobilize private capital for sustainable development and help financial institutions integrate environmental considerations into their business activities.[69] Accordingly, one of its key publications, the *Guidelines for Climate Target Setting for Banks*, provides a common methodology for banks to develop climate targets across their lending portfolios and recommends, for instance, identifying the most carbon-intensive sectors and establishing measurable emissions reduction targets.[70] Additionally, UNEP FI has published a dedicated maritime lending guidance, outlining different approaches for measuring vessel-level carbon intensity and aligning shipping portfolios with the IMO's GHG reduction trajectory.[71]

Building on UNEP FI's work, the **Net-Zero Banking Alliance** (NZBA) was launched in 2021, bringing together 43 of the world's biggest banks to align their portfolios with the goals of the Paris Agreement. Although not specific to the shipping industry, the initiative encouraged banks to develop sector-specific strategies for carbon-intensive industries, including maritime transport.[72] At its peak, NZBA accounted nearly 150 members, representing more than 40% of global banking assets. However, under political pressure, NZBA members voted to shift from a membership-based organization to a framework initiative and ceased operations in October 2025.[73]

While the NZBA established a general banking commitment to align with net-zero emissions, the **Poseidon Principles** focus solely on the shipping portfolio of financial institutions. Following the IMO's initial GHG strategy, the Poseidon Principles were established in 2019, providing banks, leasing companies, and ECAs with a common methodology to assess and disclose whether their shipping portfolios are aligned with international decarbonization pathways, and offering practical guidance on

69 UNEP Finance Initiative, "About Us," accessed October 4, 2026, https://www.unepfi.org/about/.

70 UNEP Finance Initiative, *Guidelines for Climate Target Setting for Banks*, April 2021, https://www.unepfi.org/wordpress/wp-content/uploads/2021/04/UNEP-FI-Guidelines-for-Climate-Change-Target-Setting.pdf

71 UNEP Finance Initiative, *Climate Target Setting for the Shipping Sector: Emerging Practices Report*, March 2026, https://www.unepfi.org/wordpress/wp-content/uploads/2026/05/Climate-Target-Setting-for-the-Shipping-Sector.pdf; UNEP Finance Initiative, *Climate Target Setting for the Shipping Sector*.

72 UNEP Finance Initiative, "43 Banks Launch Net-Zero Banking Alliance as Key Part of Consolidated Glasgow COP Climate Action," April 21, 2021, https://www.unepfi.org/industries/banking/43-banks-launch-net-zero-banking-alliance-as-key-part-of-consolidated-glasgow-cop-climate-action/; UNEP Finance Initiative, *Net-Zero Banking Alliance 2024 Progress Report*, https://www.unepfi.org/industries/banking/net-zero-banking-alliance-2024-progress-update/.

73 Poseidon Principles, "How Did We Get Here," accessed October 4, 2026, https://www.poseidonprinciples.org/finance/about/how-did-we-get-here/.

implementation.[74] As of 2026, there are 36 signatories to the Poseidon Principles, representing roughly 75% of global ship finance.[75] While participation remains voluntary, its standardized approach has made the Poseidon Principles the most used framework for assessing climate alignment in maritime lending.

Additionally, **principles for the effective management and supervision of climate-related financial risks** issued by the Basel Committee on Banking Supervision (BCBS) seek to improve management practices for climate-related financial risks.[76] The BCBS functions as a global standard setter for banking regulations that helps identify current or emerging risks for the global financial system.[77] Specifically, adjusting credit underwriting criteria and imposing loan limitations or restrictions, such as shorter-tenor lending and lower loan-to-value limits, were explicitly mentioned in the principles as examples of risk mitigation options to control or minimalize material climate-related risks.[78]

Regional Laws and Regulations

While voluntary initiatives encouraged climate commitments from across the banking sector, they relied on institutions' goodwill in choosing to participate. Over time, some jurisdictions incorporated similar principles into legislation, turning previously voluntary guidance into legally binding requirements.

The **International Sustainability Standards Board** (ISSB) aims to develop a global baseline for sustainability-related financial disclosure.[79] ISSB standards set out disclosure requirements asking corporates and banks to report on current effects of sustainability-related risks and opportunities on their financial position, performance, and cashflow. By doing so, the ISSB seeks to improve the comparability of information and support investors in decision-making.[80] Although the standards themselves are voluntary, as of April 2026, 28 jurisdictions have chosen to incorporate them into

74 Poseidon Principles, "How Did We Get Here."

75 Poseidon Principles, "Signatories," accessed October 4, 2026, https://www.poseidonprinciples.org/finance/signatories/.

76 Basel Committee on Banking Supervision, "Basel Committee Issues Principles for the Effective Management and Supervision of Climate-Related Financial Risks," Bank for International Settlements, June 15, 2022, https://www.bis.org/media-releases/20220615-basel-committee-issues-principles-effective-management-and-supervision-climate-related.

77 Basel Committee on Banking Supervision, "Basel Committee on Banking Supervision," Bank for International Settlements, accessed October 27, 2026, https://www.bis.org/committees/bcbs/overview.

78 Basel Committee on Banking Supervision, *Principles for the Effective Management and Supervision of Climate-Related Financial Risks* (Bank for International Settlements, June 2022), principle 8, para. 35, https://www.bis.org/publications/202206-guidelines-principles-effective-management-and-supervision-climate-related-financial-risks.pdf.

79 IFRS Foundation, "About," accessed October 4, 2026, https://www.ifrs.org/groups/international-sustainability-standards-board/.

80 IFRS Foundation, "Disclosing Information about Anticipated Financial Effects Applying ISSB Standards," August 2025, https://www.ifrs.org/content/dam/ifrs/supporting-implementation/issb-standards/disclosing-information-anticipated-financial-effects.pdf.

national legislation and require mandatory compliance.[81]

Building on ISSB standards, in 2024, the EU introduced legally binding reporting requirements through the **Corporate Sustainability Reporting Directive** (CSRD).[82] Under the CSRD, large EU companies, and certain non-EU companies, have to publicly disclose their environmental, social, and governance impacts with all information subject to third-party assessment.[83] Supporting the Directive, the **European Sustainability Reporting Standards** (ESRS) outline how the information must be reported.[84] Although the ESRS apply across sectors, they cover a broad range of maritime activities, such as deep-sea, coastal, and inland waterway transport.[85] For banks financing the shipping sector, these conditions improve the availability, consistency, and reliability of climate-related information, thereby strengthening risk assessments and investment decisions.

While the above regulations focus on transparency, the **Capital Requirements Regulation (CRR)** directly influences how banks manage financial risks. Ship finance is generally treated as specialized lending, meaning banks must apply dedicated rules when assessing these exposures. Accordingly, banks are expected to assess the transition risks associated with financed vessels. Environmental performance is no longer considered solely a sustainability issue, but as a financial risk that can influence how much capital banks must hold against a loan.[86] The regulation applies not only to financial institutions within the EU, but also indirectly affects international banks and borrowers that rely on European bank financing.[87]

Complementing the CRR, the **European Banking Authority's (EBA) Pillar 3** requires banks to disclose standardized information on the climate characteristics of their lending portfolios, such as their

81 S&P Global, "Where Does the World Stand on ISSB Adoption?", May 7, 2026, https://www.spglobal.com/sustainable1/en/insights/research-reports/issb-q2-2026; Linklaters, "ESG Quick Guide: ISSB Standards," September 8, 2025, https://sustainablefutures.linklaters.com/post/102l32e/esg-quick-guide-issb-standards.

82 European Commission, *Directive (EU) 2022/2464*, December 14, 2022, https://eur-lex.europa.eu/eli/dir/2022/2464/oj.

83 European Commission, "Corporate Sustainability Reporting." July 3, 2026, https://finance.ec.europa.eu/financial-markets/company-reporting-and-auditing/company-reporting/corporate-sustainability-reporting_en.

84 European Commission, "Corporate Sustainability Reporting"; European Commission, *Directive (EU) 2022/2464*.

85 European Commission, "https://finance.ec.europa.eu/news/commission-adopts-revised-sustainability-reporting-standards-reduce-administrative-burdens-eu-2026-07-03_enCommission Adopts Revised Sustainability Reporting Standards to Reduce Administrative Burdens for EU Businesses while Maintaining High-Quality Disclosures," July 3, 2026, https://finance.ec.europa.eu/news/commission-adopts-revised-sustainability-reporting-standards-reduce-administrative-burdens-eu-2026-07-03_en; European Commission, *Commission Delegated Regulation (EU) 2023/2772*, July 31, 2023, https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=OJ:L_202302772.

86 European Commission, *Regulation (EU) 2024/1623*, May 31, 2024, https://eur-lex.europa.eu/eli/reg/2024/1623/oj/eng; Association for Financial Markets in Europe, "Specialised Lending: Pre-CRR3 AFME Position Paper," June 2019, https://www.afme.eu/media/kixnej22/afmecrr3specialisedlendingpositionpaperfinal26072019.pdf.

87 Deloitte, "The CRR3 Is Here: Where Does Your Institution Stand on the Road to Compliance?" June 17, 2025, https://www.deloitte.com/lu/en/our-thinking/future-of-advice/the-crr3-is-here-where-does-your-institution-stand-on-the-road-to-compliance.html.

exposure to carbon-intensive sectors, climate-related transition, and physical risks. This enables investors, regulators, credit rating agencies, and financial markets to compare banks' exposure to climate-related risks and assess their lending portfolios' resilience.[88] For the shipping sector, these requirements also affect borrowers as banks need shipowners to provide reliable data to meet their disclosure obligations.[89]

Gaps in Coverage and Disclosure

Despite the growing number of voluntary and mandatory regulations, crucial gaps remain across the ship finance landscape. Existing frameworks differ in their geographic scope, coverage of financial institutions, and legal enforceability. As shipping and ship finance are global in nature, such inconsistency creates a fragmented governance landscape in which commercial banks financing the same type of asset may be subject to different requirements.

In addition, many of these frameworks, standards, directives, and regulations focus only on measuring and disclosing risks retrospectively, rather than influencing financing decisions preemptively. Initiatives such as the Poseidon Principles aim to increase transparency around banks' exposure to carbon-intensive activities. Though strengthening transparency is a step in the right direction, it is important to note that reporting on emission intensity does not equate to reducing emissions, and alignment assessment should not be conflated with commitment. Furthermore, the scope of assessment is limited to the financing period, which does not account for projected cumulative emissions over the vessel's remaining lifespan that have been locked in with the financing decision.

Gaps further remain in transaction-level transparency. A large share of ship finance is provided through bilateral loans and other private financing arrangements, for which information on individual lenders, loan conditions, and financed vessels is often not publicly available. As such, it remains difficult to conclude which institutions are financing a given vessel and whether their actual financing activities are consistent with stated climate commitments.

88 European Banking Authority, "EBA Updates Pillar 3 Disclosure Requirements on ESG Risks, Equity and Shadow Banking Exposures, as Part of Simplification Effort," June 22, 2026, https://www.eba.europa.eu/publications-and-media/press-releases/eba-updates-pillar-3-disclosure-requirements-esg-risks-equity-and-shadow-banking-exposures-part.

89 European Banking Authority, "Final Report: Draft Implementing Technical Standards," June 22, 2026, https://www.eba.europa.eu/sites/default/files/2026-06/96e1c806-c918-460c-bc8b-4e547b0d85e6/Final%20report%20on%20Draft%20ITS%20on%20amended%20disclosure%20requirements%20for%20ESG%20risks%2C%20equity%20exposures%20and%20aggregate%20exposure%20to%20shadow%20banking%20entities.pdf.

4.2 Export Credit Agencies (ECAs)

4.2.1 Functions and Financing Flows

Export credit agencies (ECAs) are public or government-affiliated financial institutions mandated to support domestic exports. In shipbuilding, ECAs play a central role in enabling the construction and export of new vessels by providing financial support to domestic shipyards.

Operating under a broad public policy directive, ECAs function to strengthen the international competitiveness of domestic industries, promote exports, and support national economic and industrial policy objectives. Whereas commercial banks primarily base their lending decisions on perceived risks and financial returns, ECAs can offer longer tenors and more favorable lending conditions than their private counterparts.

As established in previous sections, shipbuilding is a capital-intensive investment. ECAs emerged as an integral part of ship finance as they effectively reduce financial and political risks, thereby enabling commercial banks to take part in financing arrangements that they might otherwise be unwilling or hesitant to participate, mobilizing private capital alongside public support.

Common types of instruments used in ECA financing include:[90]

- **Direct Loans & Export Credit Loans:** ECAs provide direct loans or export credit loans to overseas buyers for the construction or purchase of newbuild ships, often covering up to 80% to 85% of the contract value, with repayment terms up to 12 years. Section 4.2.2 further discusses relevant governing conditions of these terms, such as OECD agreements.
- **Loan Guarantees:** ECAs provide various guarantees to financial institutions or shipyards, including loan repayment guarantees to lenders, refund guarantees for down-payments, advance payment guarantees, and performance guarantees to ensure contract fulfillment.
- **Buyers Credit Insurance:** Under a buyer's credit structure, ECAs provide insurance or guarantees to commercial banks that lend directly to overseas buyers, covering the lender against commercial and political risks of non-payment of principal and interest.
- **Syndicated & Investment Loans:** ECAs may participate in large, syndicated loans for newbuild ship financing, often in partnership with commercial banks and other export financing institutions, with repayment periods typically up to 8.5 to 12 years depending on the structure and jurisdiction.

90 Laurent Daniel and Cenk Yildiran, "Ship Finance Practices in Major Shipbuilding Economies", *OECD Science, Technology and Industry Policy Papers*, no. 75, (Paris: OECD Publishing, 2019), https://doi.org/10.1787/e0448fd0-en.

ECAs in ship finance are concentrated in the major shipbuilding economies, since ECA support follows the location of the shipyard rather than the shipowner. The most active jurisdictions include China, South Korea, Japan, as well as several European countries.[91] Because ECA support is provided on behalf of shipyards' national governments, financing decisions can double as an industrial policy tool to strategically support the construction of given vessel types and the deployment of new technologies at domestic shipyards. By allocating public finance to specific newbuild projects, investment decisions made by ECAs send important market and policy signals about the types of vessels and technologies. As international shipping decarbonizes, ECAs are capable of steering investment toward emerging ZNZ vessel technologies and accelerating commercial uptake, particularly when commercial lenders remain more cautious and risk averse amidst market uncertainties.

Considering that vessels typically remain in operation for two to three decades, an ECA financing decision made today shapes the composition and emissions profile of the global fleet well into the 2040s and beyond. Although ECA is not the only form of government support for shipbuilding, it remains a key channel for directing public finance to newbuild projects. It is therefore essential to examine the flow of ECA support to assess whether public finance aligns with countries' climate commitments and the shipping sector's transition to ZNZ-capable vessels or instead continues to reinforce investment in conventional fossil fuel-propulsion.

[Case Study 2: South Korea's Public Finance Support for Shipping]

Below is a common structure found in South Korea's ship financing that depicts the relationship among different stakeholders involved and the flow of various types of financing provided, noting that changes and variations are possible on a deal basis.[92] Under South Korean laws, a Ship Investment Company (SIC) is a stock company established for the purposes of investing assets in ships and distributing any profits accruing from such investment to shareholders, and SICs may establish Special Purpose Companies (SPCs) as ship-owning entities.[93] SPCs are commonly incorporated in flag-of-convenience jurisdictions under a one ship-one company setup as this structure separates the financing and ownership of individual vessels from the broader credit risk of the shipping company, thereby achieving bankruptcy remoteness.[94]

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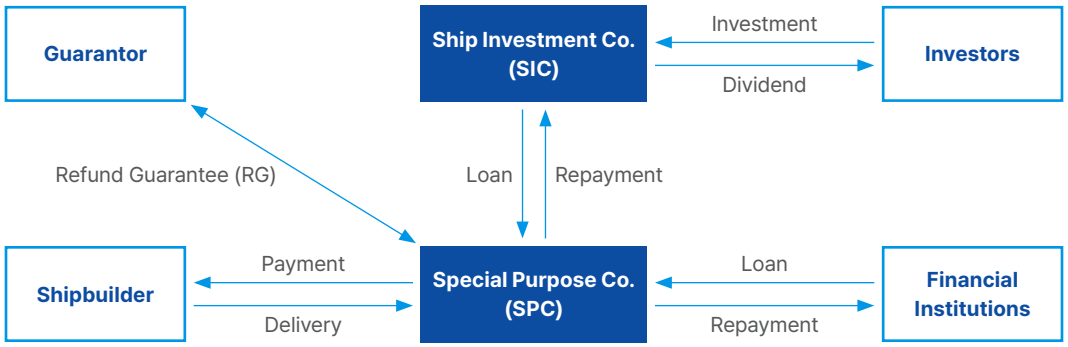
91 Daniel and Yildiran, "Ship Finance Practices in Major Shipbuilding Economies."

92 Korea Ocean Business Corporation, "Shipping Finance," accessed October 21, 2026, https://www.kobc.or.kr/ebz/eng/contents.do?mId=0801010000.

93 *Ship Investment Company Act*, art. 2(1) and arts. 3(2)-(3), English translation provided by Korea Legislation Research Institute, https://elaw.klri.re.kr/eng_mobile/viewer.do?hseq=72952&type=part&key=42.

94 Jang Se-ho, "해양금융과 산업은행의 역할 [Maritime Finance and the Role of Korea Development Bank]," presentation, Korea University Law School, May 12, 2021, slide 4, https://kulawschool.korea.ac.kr/law/lawschool/essl_notice.do?mode=download&articleNo=266610&attachNo=169860&totalNoticeYn=&totalBoardNo=.



As previously discussed, there are a variety of instruments commonly used in ECA financing to strengthen industrial competitiveness. South Korea's ECAs, Export-Import Bank of Korea (KEXIM) and Korea Trade Insurance Corporation (K-SURE), work alongside with other key public financial institutions, including Korea Development Bank (KDB), Korea Ocean Business Corporation (KOBC), and Korea Asset Management Corporation (KAMCO), to provide support for Korea's shipbuilding industry. In addition to direct support for shipyards, these institutions also provide loans, guarantees, and insurance to shipping companies, including foreign companies, who order vessels built in South Korean shipyards.

Examining the ship finance portfolios of KEXIM and K-SURE, along with portfolios of KDB, KOBC, and KAMCO, further illustrates the flow and function of ECA financing.[95] **From 2015 to 2026, South Korean ECAs (KEXIM and K-SURE) provided approximately $45.0 billion USD in loans and insurance for vessel newbuilds. Together with KDB, KOBC, and KAMCO, total support from these five South Korean public financial institutions totaled approximately $58.0 billion USD.**

Further analysis reveals a deep chasm between shipping decarbonization targets and the actual disbursement of South Korean public finance for vessel newbuilds. When breaking down this portfolio by fuel type, data indicates a heavy and continued investment into constructing fossil-fuel-only-propelled vessels. **93% of the total financing volume ($53.8 billion USD) was directed toward construction of vessels that are only capable of fossil fuel-propulsion.** This is corroborated by shipyard orderbook patterns: of the 1,593 vessel newbuilds constructed in South Korean shipyards during this period, 1,515 are constructed with engines only capable of running on fossil fuels.[96]

95 Please see Appendix for detailed methodology.

96 Note that 213 vessels with an unidentified fuel type are classified as fossil-fuel-only-propelled ships. Please see Appendix for detailed methodology.

[Figure 2] Year-over-year trends of South Korean public financing toward vessel newbuilds



Year-over-year financing trends illustrate the historical pattern of South Korea's public financing directed toward fossil-fuel-only-propelled vessels and ZNZ-capable vessels. From 2015 to 2020, public finance was entirely allocated to construct fossil-fuel-only-propelled vessels. In 2022, financing amount reached its highest point during the observed period at nearly $8.9 billion USD. Of this total, support for the construction of fossil-fuel-only-propelled vessels remained overwhelmingly dominant at approximately $8.1 billion USD. A notable shift in the composition occurred in 2024 when financing for ZNZ-capable vessels reached its peak volume at approximately $2.2 billion USD, presumably in reaction to the IMO's adoption of 2023 Revised GHG Strategy. However, financing for ZNZ-capable vessels decreased again in 2025 to approximately $660 million USD while financing for fossil-fuel-only-propelled vessels rebounded to over $5.3 billion USD.

Although what shipyards build and deliver depends on what shipowners order, ECA financing provided to shipyards and shipowners nevertheless carry the power to steer market trends and policy directions. The use of public funds reflects how a country manages competing priorities and measures actions against ambitions. The lasting consequence of continued construction of fossil-fuel-only-propelled vessels is decades of locked-in emissions that are incompatible not just with the IMO's Revised GHG Strategy, but also South Korea's own net-zero commitments. Furthermore, investment decisions made by these public finance institutions perpetuate South Korean shipyards to deepen an expertise that is tied to the fossil fuel industry, risking the loss of long-term industry competitiveness as climate regulations strengthen in the maritime space.

4.2.2 Governance

As government-owned or government-backed institutions, ECAs provide finance to support their countries' exporters across sectors, in alignment with national industrial interests. This structure informs an inherent risk, as governments might be inclined to offer better financial terms and weaker environmental oversight to help their own exporters win contracts. If ECA financing terms remain uncoordinated, such motive risks a race to the bottom in which competitiveness concerns override prudential due diligence, informing the need for global cooperation on ECA financing standards. Today, this is principally achieved through the Organization for Economic Co-operation and Development (OECD). Under the OECD, common rules on financing terms, environmental due diligence, and increasingly, climate alignment, are developed and established.

OECD Mechanisms Governing Export Credits

The adopted **OECD Guidelines for Multinational Enterprises on Responsible Business Conduct** are recommendations to enterprises to encourage commitment to international standards and ethical values in areas such as human rights, labor rights, corruption, and environment (including climate change and biodiversity).[97] The Guidelines work through National Contact Points, which are government bodies in each adhering country that can receive complaints about company conduct and mediate or issue findings. Some complaints to NCPs regarding ECA have been accepted, though discussion is ongoing on whether ECAs are defined as multinational enterprises or state enterprises, as the latter category is not covered under the Guidelines.[98]

The OECD Arrangement on Officially Supported Export Credits (hereafter "the Arrangement") entered into force in 1978, and it continues to function as a key instrument that specifically governs ECAs.[99] It is not a binding OECD legal act, but a "gentlemen's agreement" among Participants—Australia, Canada, the European Union, Japan, New Zealand, Norway, South Korea, Switzerland, Türkiye, the United Kingdom, and the United States.

The Arrangement's core purpose is to create a level playing field to ensure exporters compete on the price and quality of their goods and services, rather than the amount of government support to secure

97 OECD, *OECD Guidelines for Multinational Enterprises on Responsible Business Conduct*, (Paris: OECD Publishing, 2023), https://www.oecd.org/content/dam/oecd/en/publications/reports/2023/06/oecd-guidelines-for-multinational-enterprises-on-responsible-business-conduct_a0b49990/81f92357-en.pdf.

98 OECD Watch, "It's Time to Hold Export Credit Agencies Accountable," December 11, 2024, https://www.oecdwatch.org/its-time-to-hold-export-credit-agencies-accountable/.

99 OECD, "Arrangement and Sector Understandings," accessed October 4, 2026, https://www.oecd.org/en/topics/sub-issues/arrangement-and-sector-understandings.html.

export contracts. The Agreement applies to all official export support with a repayment term of two years or more, and it establishes baseline lending terms such as minimum interest rates and maximum repayment periods. Notably, as discussed below, the main body of the Arrangement also includes restrictions on specific activities not to be supported by ECAs, such as with coal power generation.

The Arrangement also has dedicated annexes known as "Sector Understandings," which are rules adapted from the general text to govern specific sectors, such as aircraft, nuclear power, renewable energy and climate-related projects, and ships. Under the Arrangement, shipping is governed by the **Sector Understanding on Export Credits for Ships** (hereafter "SSU"), an annex to the Arrangement administered by the OECD Shipbuilding Committee.[100] Participants to the SSU are Australia, the European Union, Japan, New Zealand, Norway, and South Korea. The SSU builds on previous arrangements dating to 1969, and its substance is strictly financial. It applies to officially supported export credits for sea-going vessels, ship conversions, and hovercraft vessels, setting specific terms and conditions such as maximum repayment periods and minimum interest rates. The purpose of the SSU is to prevent shipbuilding nations from underbidding one another. As it stands, the SSU does not contain any environmental, fuel-type, or GHG criteria, nor does it condition financing terms on a vessel's emissions intensity or consistency with a net-zero pathway.

Another key OECD instrument is the **Recommendation of the Council on Common Approaches for Officially Supported Export Credits and Environmental and Social Due Diligence** (hereafter, "Common Approaches").[101] The Common Approaches require an assessment of projects by their potential environmental and social impact; ECAs must conduct a review based on international standards and disclose information on higher-impact transactions. As such, this is a due-diligence and disclosure framework, not a standard restricting what can be financed.

In Shipping, vessel construction transactions supported by an ECA are, in principle, subject to Common Approaches screening and classification. However, because the Common Approaches assess environmental and social risks at the project level rather than the overall trajectory of a vessel's GHG emissions, there is no requirement to reject or condition financing for a newbuild even if its lifetime emissions are inconsistent with global climate goals. The language of the text further focuses on "projects," calling into question the duty to report on emissions from mobile assets, such as ships.

100 OECD, *Sector Understanding on Export Credits for Ships*, OECD/LEGAL/5016 (2025), https://legalinstruments.oecd.org/public/doc/355/355.en.pdf.

101 OECD, "Environmental and Social Due Diligence," accessed October 4, 2026, https://www.oecd.org/en/topics/sub-issues/environmental-and-social-due-diligence.html.

Leveraging OECD Mechanisms for Climate Goals

In shipping, vessel construction transactions supported by an ECA are, in principle, subject to Common Approaches screening and classification. However, the Common Approaches assess environmental and social impact at the "project" level.[102] This diction has given rise to claims that ECAs are exempt from the duty to report on emissions from mobile assets, such as ships, that do not have a fixed project location, and therefore they are not required to reject or condition financing for a newbuild even if the vessel's lifetime emissions are inconsistent with global climate goals. However, there are no technical or knowledge barriers preventing ECAs from undertaking due diligence and applying international standards. Furthermore, an advisory opinion from the International Tribunal on the Law of the Sea explicitly points out that State Parties to the United Nations Convention on the Law of the Sea have the "specific obligation to take all measures necessary to ensure that anthropogenic GHG emissions under their jurisdiction or control do not cause damage by pollution" and that this obligation is "of due diligence" and "applies to a transboundary setting."[103]

In October 2021, ahead of COP26, Participants to the OECD Arrangement agreed to end official export credit support for unabated coal-fired power plants.[104] This was done through a special clause in the Arrangement that prohibited support for new coal power plants without operational carbon capture, utilization, and storage (CCUS) and restricted support for existing plants. The ban demonstrated that despite being a non-binding "gentlemen's agreement," the Arrangement can set market financing norms. Similar attempts were made to restrict ECA support for oil and gas projects—UK, the EU, and Canada proposed to extend the coal prohibition to oil and gas, but because the Arrangement requires unanimity, a small minority, reportedly mostly South Korea and Türkiye, vetoed the proposal and tabled the discussion in late 2023.[105]

Still, the governance lever that banned coal and was suggested for oil and gas could be turned on for fossil-fuel-only-propelled vessels. Ships financed today under the SSU typically operate for 20–30 years, meaning a newbuild's fuel choice locks in decades of GHG emissions well beyond any near-term policy horizon. Participants could adopt a restriction on new fossil-fuel-only-propelled tonnage. This would secure a leveled playing field among countries while supporting the public finance transition

102 OECD, "Environmental and Social Due Diligence."

103 International Tribunal for the Law of the Sea, *Request for an Advisory Opinion Submitted by the Commission of Small Island States on Climate Change and International Law*, Advisory Opinion of May 21, 2024, Case No. 31, para. 441(3)(d), https://www.itlos.org/fileadmin/itlos/documents/cases/31/Advisory_Opinion/C31_Adv_Op_21.05.2024_orig.pdf.

104 OECD, "Agreement Reached at OECD to End Export Credit Support for Unabated Coal-Fired Power Plants," October 22, 2021, https://www.oecd.org/en/about/news/press-releases/2021/10/agreement-reached-at-oecd-to-end-export-credit-support-for-unabated-coal-fired-power-plants.html.

105 ECA Watch, "South Korea and Turkey Block Landmark OECD Deal to End Fossil Fuel Subsidies," December 31, 2024, https://www.eca-watch.org/updates/south-korea-and-turkey-block-landmark-oecd-deal-to-end-fossil-fuel-subsidies/.

towards sustainable investment practices in vessels operating on ZNZ fuels, further sending a strong market signal to the industry.

Voluntary Mechanisms for ECAs

In December 2023, the **Net-Zero Export Credit Agencies Alliance** (NZECA) was established at COP28.[106] Its members include UK Export Finance (UKEF), Swedish Export Credit Corporation (SEK) and Swedish Export Credit Agency (EKN), Export and Investment Fund of Denmark (EIFO), Export Development Canada (EDC), Finland's Finnvera, and the Spanish Export Credit Agency (CESCE). Through the NZECA, members announced voluntary net-zero portfolio commitments, pledging to transition their operational and attributable GHG emissions to net-zero by 2050, to set and disclose science-based interim targets, to publish annual emissions data, and to end direct support for international unabated fossil fuel energy sector projects (with some caveats for projects aligned with 1.5 limit and the Paris Agreement). Affiliate members include ECAs of France, Kazakhstan, and the United Arab Emirates, who support the Alliance's goals without yet adopting a binding net-zero target.

Another mechanism that applies to ECAs is the **Clean Energy Transition Partnership** (CETP).[107] Launched at COP26 in November 2021, signatory governments and their ECAs, public finance institutions, and multilateral development banks pledged to end new direct international public finance for the unabated fossil fuel energy sector. The CETP is a voluntary and unilateral framework, rather than a binding arrangement. Among their 40 current members, implementation progress remains uneven.[108]

Governance Gaps in Shipping Finance

Overall, mechanisms that govern ECA financing in the shipping sector leave structural gaps open and neglect to capture their climate impacts. Intervention points of existing measures are disproportionately post-facto as they emphasize measurement and disclosure, rather than preemptive emissions reduction. Furthermore, governance frameworks focus mostly on energy sector restrictions and do not extend to fossil-fuel-only-propelled vessels. Neither the OECD Common Approaches nor the SSU consider a vessel's fuel type or emissions intensity, meaning ECAs continue to finance fossil-fuel-only-

106 UNEP Finance Initiative, "Net-Zero Export Credit Agencies Alliance," accessed October 4, 2026, https://www.unepfi.org/climate-change/net-zero-export-credit-agencies/.

107 Clean Energy Transition Partnership, "Clean Energy Transition Partnership," accessed October 4, 2026, https://cleanenergytransitionpartnership.org/.

108 Natalie Jones, Indira Urazova, Claire O'Manique, Adam McGibbon, and Kate DeAngelis, *Holding Course, Missing Speed: Protecting Progress on Ending Fossil Fuel Finance and Unlocking Clean Energy Support* (International Institute for Sustainable Development, September 2025), https://www.iisd.org/publications/report/ending-fossil-fuel-finance-unlocking-clean-energy.

propelled vessels with a 20- to 30-year operating life, locking in emissions well beyond 2050—the net-zero deadline set by the IMO's 2023 GHG Strategy.

Notably, the ECAs of key shipbuilding countries—China, South Korea, and Japan—have not joined any voluntary initiatives outlined in above sections. Furthermore, China is not a participant of the OECD Agreement. As these three countries collectively account for the overwhelming majority of global commercial shipbuilding and channel substantial financing into the sector, such gaps in governance spotlight a glaring absence of accountability for the lifecycle emissions of vessels constructed with their support.

5. Conclusion

Securing external finance is often a prerequisite for placing ship orders as shipowners can rarely fund vessel newbuilds with cash or equity alone. As a result, financiers wield significant power in choosing how to deploy capital, in ways that can either perpetuate fossil fuel dependency at sea or accelerate the transition to ZNZ shipping aligned with the IMO's Revised GHG Strategy. Today, public and private financial institutions continue to provide billions of dollars that allow shipowners to order and shipyards to construct fossil-fuel-only-propelled vessel newbuilds.

Furthermore, ship finance decisions have a lasting impact on the composition and associated emissions of the global fleet as propulsion technology is locked in when shipbuilding contracts are signed and vessels have an average lifespan of 20 to 30 years. Maritime decarbonization efforts have largely focused on fuels, technologies, and regulations, while paying less attention to financial institutions that enable the expansion of fossil-fuel-dependent fleet.

Despite growing climate ambitions and increasing reporting requirements, governance frameworks across maritime and financial sectors remain largely fragmented, retrospective, and voluntary, with constrained power to preemptively restrict or condition ship financing decisions. Accountability is further limited by opaque transaction-level disclosures and unpublicized due diligence criteria for financing.

Ship finance represent a critical strategic lever in accelerating maritime decarbonization. Adopting stricter financing criteria for vessels in alignment with IMO targets and increasing transparency in these financing decisions can effectively redirect billions of dollars away from building fossil-fuel-only-propelled vessels toward ZNZ-capable vessels and related infrastructure, leading to substantial change and tangible impact in support of the net-zero transition.

Appendix

Methodology for Case Study 1

Data for this case study was procured by Profundo utilizing financial databases (FactSet, Dealogic, PitchBook), project finance database Green Street (formerly IJGlobal), company reports (annual, interim, quarterly), other company publications, company register filings, and media and analyst reports. Bank portfolio data was researched for the period from January 2016 to August 2025.

Individual bank contributions to syndicated loans were recorded to the greatest extent possible, where these details were included in the financial database or in company or media publications. In many cases, the total value of a loan, as well as the number of banks participating in it, is known. However, the amount each individual bank commits often has to be estimated. Profundo has developed a methodology using a beta regression model to estimate financial institutions' contributions from available information. Specifically, when the fees charged by each financial institution are available, this research estimates each financial institution's contribution as a proportion of the total fees received by all financial institutions. Then, the estimated proportion (for instance, if Bank A received 10% of all fees) is applied to the total deal value (assuming a $10 million USD deal, Bank A would be assigned a contribution of $1 million USD, or 10% of $10 million USD).

When the deal's fee data is missing or incomplete, this research used the book ratio approach. The book ratio determines the deal's distribution among financial institutions involved as lenders, based on their roles.

The beta regression model considers the following variables:

- The number of total participants
- The ratio between bookrunners and other participants

$$Book\ ratio := \frac{number\ of\ bookrunners}{number\ of\ participant}$$

- The role of the financial institution (bookrunner or not). For example, bookrunner is attributed with a higher portion of the loan.
- The type of financing: Corporate loan, revolving credit facility, bond issuance, and share issuance.

Given the above variables, the book ratio methodology fits a beta regression model of the form:

$$Proportion\ per\ financial\ institution = g^{-1}(x_i^{\top}\beta),$$

where g^{-1} is the inverse of the Logit function, x_i is each of the variables considered and β are the parameters to estimate.

Methodology for Case Study 2

The dataset for this case study was reconstructed using official documents submitted by South Korea's five major public finance institutions—KEXIM, K-SURE, KDB, KOBC, and KAMCO—to the National Assembly, covering transaction-level and aggregated newbuild financing provided from 2015 to 2026.

SFOC then standardized the dataset and supplemented through extensive desktop research:

- Using identifiable information on engine fuel type, vessels built with ammonia dual fuel and methanol dual fuel engines are counted as ZNZ-capable, while vessels built with ammonia ready, methanol ready, LNG ready, LNG dual fuel, LPG ready, LPG dual fuel, and VLF IFO engines are counted as fossil-fuel-only-propelled.
- Using the average exchange rate between currencies (Korean won-US dollar, Euro-US dollar) of the transaction year as published by the European Central Bank, financing amount for each vessel in all denominations was converted into corresponding amount in US dollar.

In the orderbook analysis and year-over-year trends analysis, vessels with an unidentified fuel type are classified as fossil-fuel-only-propelled ships. This is because their financing is concentrated between 2015 and 2019 (except for a marginal amount in 2025), prior to the earnest increase in ZNZ-capable orders following stricter IMO GHG regulations.

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Solutions for Our Climate(SFOC) is an independent policy research and advocacy group that aims to make emissions trajectories across Asia compatible with the Paris Agreement 1.5°C warming target.