THE ROLE OF FINANCE IN ACHIEVING GREEN SHIPPING

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1. Introductory Points

Due to its large scale, the maritime industry constitutes a major contributor to air pollution, accounting for slightly less than 3% of the global CO_2, despite being one of the most environmentally friendly modes of transportation.[1] For context, if shipping were a country, it would be the world's sixth largest carbon emitter alongside Brazil and Germany.[2] Recent projections show that if no action is taken immediately, GHG may rise to 250% from their 2012 levels by 2050.[3] Therefore, a 'sea change is in the making',[4] as the shipping sector seeks to reduce its carbon footprint by taking the leap towards the 'green shipping' era.

The term 'green shipping' refers to 'the set of practices and eco-environmental efficiency adopted in shipping'[5] that ensures cargos are being transported so the used energy/resources do not generate pollutants and preserve the global environment from GHG emissions.[6] Due to the large volume of maritime activity and its impact on CO_2 emissions, green shipping has been portrayed as 'the new gold',[7] leading to the introduction of numerous green shipping-related initiatives. IMO', set a goal to decarbonise the maritime industry by 50% by the end of 2050 comparing to 2008.[8] This target aligns with EU Climate Target Plan aim to reduce GHGs to at least 55% below 1990 levels by 2030,[9] and Paris Agreement goal to keep the global temperature increase below 2°C.

IMO's initiative is critical because, unlike other sectors, shipping was neither included in the specific obligations aiming to reduce GHGs imposed by Kyoto Protocol, and no explicit reference to the maritime sector was made in the Paris Agreement. Additionally, although UNCLOS obliges States to adopt international rules/standards to prevent vessel-sourced pollution, it does not provide for obligations regarding GHGs and, therefore, a general perception exists that shipping has 'escaped' its legal obligations concerning climate change.[10]

However, despite the alarming situation and the relevant steps that have been taken, one of the greatest obstacles to green shipping, is the need for large-scale capital injections to acquire new vessels with fuel-efficient technologies and/or retrofit the old ones.[11] Inevitably, finance plays a pivotal role towards the creation of a greener shipping future and supporting green/sustainable finance in the maritime sector is of great significance for two further reasons: First, investing in green technologies represents a huge upfront cost for shipowners, meaning shipping companies may be reluctant to invest out of fear of a short-term competitive disadvantage in case they are the first/sole movers in this direction.[12] Second, shipping finance generally has become more difficult since 2008, due to numerous withdrawals/defaults of maritime actors following the financial crisis and the consequent

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[1] Paul Balcombe, James Brierley, Chester Lewis, Line Skatvedt, Jamie Speirs, Adam Hawkes, and Iain Staffell, 'How to Decarbonise International Shipping: Options for Fuels, Technologies and Policies' (2019) 72 *Energy Conversion and Management* 182.

[2] Ibid.

[3] Yubing Shi, 'Reducing Greenhouse Gas Emissions from International Shipping: Is It Time to Consider Market-Based Measures?' (2016) 64 *Marine Policy* 123.

[4] 'Green Shipping Is the New Gold' *Hellenic Shipping News* (Forum Post, 24 August 2019) <https://www.hellenicshippingnews.com/green-shipping-is-the-new-gold/#:~:text=But%20what%20exactly%20is%20green%20shipping%3F%20%E2%80%9CGreen%20shipping,port%20management%20and%20equipment%20lifecycles%20i.e.%20circular%20economy> ('Green Shipping Is the New Gold').

[5] Augusto Felício, Ricardo Rodrigues and Vitor Caldeirinha, 'Green Shipping Effect on Sustainable Economy and Environmental Performance' (2021) 13(8) *Sustainability* 4256.

[6] Taehee Leea and Hyunjeong Nam, 'A Study on Green Shipping in Major Countries: In the View of Shipyards, Shipping Companies, Ports, and Policies' (2017) 33(4) *The Asian Journal of Shipping and Logistics* 253.

[7] Green Shipping Is the New Gold (n 4).

[8] International Maritime Organization, *Adoption of the Initial IMO Strategy on Reduction of GHG Emissions from Ships and Existing IMO Activity Related to Reducing GHG Emissions in the Shipping Sector* (Note to the UNFCC Talanoa Dialogue, 2018) <https://unfccc.int/sites/default/files/resource/250_IMO%20submission_Talanoa%20Dialogue_April%202018.pdf>.

[9] European Commission, '2030 Climate Target Plan' (Webpage) <https://ec.europa.eu/clima/eu-action/european-green-deal/2030-climate-target-plan_en>.

[10] Beatriz Garcia, Anita Foerster and Jolene Lin, 'Net Zero for the International Shipping Sector? An Analysis of the Implementation and Regulatory Challenges of the IMO Strategy on Reduction of GHG Emissions' (2021) 33(1) *Journal of Environmental Law* 85.

[11] Pia Rebelo, 'Green Finance for Sustainable Maritime Transport System: Developing Universal Vernacular for Green Shipping' (2020) 34(1) *Australian and New Zealand Maritime Law Journal* 15 ('Rebelo').

[12] Watson Farley & Williams, 'Sustainable Finance and Shipping' (Webpage, 4 February 2021) <https://www.wfw.com/articles/sustainable-finance-and-shipping> ('Sustainable Finance and Shipping').

introduction of the Basel criteria, with banks that historically dominated this market significantly limiting their shipping related portfolios,[13] situation that has been further deteriorated due to Covid-19 pandemic.[14]

Green/Sustainable finance represents a relatively new sector, and, despite the increasing interest of scholars that have contributed vastly to the literature, it is inevitably still 'uncharted territory' to some extent. The present thesis contributes to the existing literature by dealing with the pressing and important question of how (corporate) finance can assist in allocating capital in a way that can contribute to the reduction of the environmental impact of shipping. For this purpose, the method I employ will be to gauge current international/European doctrinal sources that refer to and/or can be used for achieving green shipping purposes, such as conventions and regulations, as well as the existing market-based practices/financial products.

Structurally, the paper will be divided into four parts. *First*, the most important international and European finance initiatives/measures aiming to decarbonise the shipping industry will be sketched. *Second,* after giving an overview of the present situation, the current barriers along with the consequences/advantages of sustainable finance/financial products for shipping stakeholders will be presented. *Third*, the present market-based products will be assessed, namely the green/sustainability-linked loans and bonds—along with practical examples—to proclaim that the necessary corporate finance framework exists to assist in transforming the 'blue economy', into green. *Fourth,* the writer will conclude with thoughts related to policy and market-based products that may encourage green/sustainable shipping finance even more.

2. Sustainable/Green Finance and Shipping

2.1. Shipping Industry Initiatives

2.1.1. EU Taxonomy

Taxonomy Regulation constitutes an EU-wide classification system which explains which activities can be characterised as environmentally sustainable.[15] By virtue of the Regulation, investors can better consider the environmental impact of companies and limit undesirable practices of 'greenwashing', which are understood as misleading ESG disclosures by firms looking to present themselves as green/sustainable when such claims are deceptive/inflated.[16]

Taxonomy Regulation establishes the criteria under which an economic activity qualifies as environmentally sustainable.[17] Any economic activity falling under the six environmental objectives embodied in the Regulation is deemed environmentally sustainable. The categories are the following: (i) climate change mitigation, (ii) climate change adaption, (iii) sustainable and protection of water and marine resources, (iv) transition to a circular economy, (v) pollution prevention and control/protection, and (vi) restoration of biodiversity/ecosystems. Additionally, there are two other types of environmentally sustainable activities, the 'transition'[18] and the enabling 'activities'.[19]
To reach those goals, Taxonomy Regulation includes certain performance 'thresholds' that need to be met, namely an activity must significantly contribute to one of the six environmental objectives causes, and it must also not pose significant harm to the other five, meet the minimum safeguards of human/working rights, and comply with the technical screening criteria. Notably, Taxonomy Regulation classification system can be used by any relevant market participant.

The Regulation confers upon the EC the power to proceed with Delegated Acts, which provide the technical screening criteria regarding the environmental objectives. Taxonomy Regulation came into force in 12 July 2020

[13] Harry Papachristou, 'HSBC's Greek retreat leaves market guessing on future path', *TradeWinds* (Webpage, 20 January 2023) <https://www.tradewindsnews.com/finance/hsbc-s-greek-retreat-leaves-market-guessing-on-future-path/2-1-1391174>.
[14] 'Ship Finance And COVID-19' *Hellenic Shipping News* (Webpage, 27 March 2020) <https://www.hellenicshippingnews.com/ship-finance-and-covid-19/>.
[15] Caterina Lucarell Camilla Mazzoli, Michela Rancan and Sabrina Severini, 'Classification of Sustainable Activities: EU Taxonomy and Scientific Literature' (2020) 12(16) *Sustainability* 646.
[16] Ellen Pei-yi Yua, Bac Van Luub and Catherine Huirong Chen, 'Greenwashing in Environmental, Social and Governance Disclosure' (2020) 52 *International Business and Finance* 101192.
[17] *Regulation (EU) 2020/852 of the European Parliament and of the Council of 18 June 2020 on the establishment of a framework to facilitate sustainable investment, and amending Regulation (EU) 2019/2088* [2020] OJ L 198/13, art.1.
[18] Ibid art 10(2).
[19] Ibid art 16.

and became fully operational after the adoption of Delegated Acts specifying the technical screening criteria, developed in two phases, i.e. 31 December 2020, and January 2023 respectively.

The potential of shipping in minimising GHG emissions and greening the transport sector has led to its recognition as a 'transitional economic activity', namely an activity that currently cannot be totally replaced by non-polluting alternatives but still can contribute to a zero-carbon economy. Consequently, maritime activities have been included in the Regulation, paving the way to a sustainable shipping future, since, as accurately pointed out by Rebelo, the lack of a vernacular/classification system, which benchmarks what constitutes a 'green maritime activity', was considered perhaps the greatest obstacle for green shipping.[20]

Specifically, EC has acknowledged that the technical screening criteria for shipping must be adopted and be applicable until 2025;[21] therefore, the Commission Delegated Act was published, setting the necessary criteria. The maritime transport criteria can be divided into the following categories: (i) inland passenger water transport; (ii) inland freight water transport; (iii) retrofitting of inland water passenger and freight transport; (iv) sea and coastal freight water transport; (v) sea and coastal passenger water transport; (vi) retrofitting of sea and coastal freight and passenger water transport; and (vii)infrastructure for water transport.[22]

Generally, two of the most important criteria adopted for vessels are (a) their fossil fuel disqualification and (b) the need for zero CO_2 emissions. Specifically, according to the technical screening criteria, ships used for inland and sea/coastal freight water transport shall 'not (be) dedicated to the transport of fossil fuels'.[23] Furthermore, a common requirement relevant to all shipping transport activities constitutes that vessels are required to produce zero direct (tailpipe) CO_2 emissions.[24] However, there are specific exemptions applying to passenger water transport vessels, inland freight water vessels and sea/coastal water vessels until 31 December 2025.[25] In fact, several technical screening criteria cross-refer into EU/international laws, such as EU SRR and Regulation 14 regarding sulfur oxides of MARPOL Annex VI.

However, these developed technical screening criteria have been criticised by certain maritime stakeholders who claim that such criteria are unsuitable and imply an erroneous understanding of the shipping's idiosyncrasy and needs. They argue that this is because of the unreasonable/arbitrary use of IMO's Energy Efficiency Design Index—which 'goes beyond IMO requirements'—and the 'ostracism' of vessels transporting fossil fuel.[26]

Although fossil fuel disqualification ambitions to discourage investments relying on fossil fuels, not all fossil fuel types are equally environmentally harmful, and such an approach may be troublesome during the transitional period. The EU Taxonomy Regulation does not consider technologies/fuels that can assist the transition to climate neutrality (e.g., LNG)[27] and, therefore, because there are currently no zero-carbon fuels or propulsion technologies available, this requirement may draw out capital from such 'transition fuels' that certain actors would wish to adopt as a steppingstone measure to a green(er) shipping.

2.1.2. EIBS's Green Shipping Guarantee Programme

EIB has adopted the *Green Shipping Guarantee Programme* (also called 'Green Shipping Financing Programme') to mobilise EUR750 million towards the implementation of green technologies across EU, mainly by encouraging investments in purchasing greener vessels and/or retrofitting the existing fleet.[28]
This initiative mitigates credit risk of shipping-related bank loans for ESG investments through reviewing the main constraints, namely the risks of shipping and the reluctance of banks. Key ship-lending institutions are part of the programme and are backed by EIB's AAA credit rating.[29]

[20] Rebelo (n 11).
[21] Ibid.
[22] Ibid annex II.
[23] Ibid. See also ss 3.3, 6.8, 6.9, 6.10, 6.12, 6.16.
[24] Ibid s 3.3.
[25] Ibid.
[26] Union of Greek Shipowners, *Annual Report 2020-21* (Report, 2021) ('Union of Greek Shipowners').
[27] Ibid.
[28] European Investment Bank, 'Green Shipping Guarantee Programme' (Webpage, 11 May 2016) <https://www.eib.org/en/projects/pipelines/all/20150334>.
[29] Jason Chuah, 'Aspects of Green Shipping Finance: Insights from the European Investment Bank's Schemes' in Proshanto Mukerjee, Maximo Mejia and Jingjing Xu (eds), *Maritime Law in Motion* (Springer, 2020) vol 8.

EIB supports up to 100% of the incremental environmental investments on the current fleet and up to 50% on new ships; in both scenarios, the overall financing will be 20-50% of the size of the overall shipping bank loan.[30] The rest of the loan will be paid by commercial banks that lead to a co-financing of these facilities, and, consequently, the financing of Green Shipping Guarantee Programme is given by the Partner Financial Institution.[31] This co-financing loan structure tries to ensure that operators lacking a 'bankable business plan' will not get supported through EIB.[32]

Overall, EIB finances green projects in three ways — (i) under its usual loan programme with large shipping companies, (ii) under the umbrella of European Fund for Strategic Investment: Green Shipping Loan Programme, and (iii) under the umbrella of Connecting Europe Facility: New Financial Instruments to further support Green Shipping Investments, including Green Shipping Guarantee Programme.[33]

Based on EIB, loan agreements need to meet certain criteria: first, for an agreement/project to be qualified as an eligible one under the EIB Transport Lending Policy, it must be governed by significant European interest(s) (e.g., ownership, flag, routes); second, the funds must be used for both retrofitting the existing ships and constructing new ones; third, such an agreement shall focalise on green investments, indicatively dual fuel engine technology, scrubbers, propulsion technology etc.; finally, although there are not prescribed specific technologies, for a technology to qualify as eligible, it must contribute significantly in emissions reduction.

Additionally, in its attempt to combine environmental law and commercial contracts and to clarify which green projects EIB will cover, EIB published proforma contract terms in 2014 which constitute template clauses setting the environmental obligations expected by EIB for borrowers. These terms can be summarised as follows: (i) implementation/operation of the project in compliance with environmental law, (ii) obtaining/maintaining requisite environmental approvals for such project, and (iii) compliance with applicable national and EU legislation (such as laws, standards, regulations, treaties).[34]

In December 2017, LNG-powered ferry 'Honfluer' Brittany Ferries', constituted the first vessel that was financed though this initiative that entered into force in April 2019[35] while the programme continues to see success. However, although pioneering in promoting green shipping, the programme has received negative criticism as the environmental standards imposed on borrowers depend on a matrix of EU laws/regulations, bringing 'too many requirements, too soon' and making the scheme 'too demanding'.[36] Additionally, shipowners are supposed to be well-established, competent, and experienced to have access to the programme which along with the programme's administrative complexity, leads, unwillingly, to the exclusion of certain shipowners.[37] Therefore, private banks may be better equipped to assist shipping companies, because they have more flexibility and can impose standards the requirements of which will be steadily tightened making Poseidon Principles more suitable.[38]

2.1.3. Poseidon Principles

In June 2019, a group of 11 major international credit-financial organisations, representing approximately 20% of the global ship finance portfolio of about USD100 billion, signed the Poseidon Principles, a framework encouraging responsible shipping finance in which shipowners must adopt/enforce environmental targets to be provided with banking funding.[39] During the first half of 2021, banks issued approximately USD1billion in Poseidon-linked debt.[40]

[30] Manolis Kamvussanos and Dimitris Tsouknidis, 'Green Shipping Finance: Existing Initiatives and the Road Ahead' in Byoung-Wook Ko and Dong-Wook Song (eds), *New Maritime Business: Uncertainty, Sustainability, Technology and Big Data* (Springer, 2021) ('Kamvussanos and Tsouknidis').
[31] Maria Tzoumanika, 'European Investment Bank (EIB)-EIB Green Shipping Programmes' (Presentation, June 2019) <https://www.shortsea.gr/wp-content/uploads/2019/06/Maria-Tzoumanika-European-Investment-Bank.pdf>.
[32] Manolis Kamvussanos and Dimitris Tsouknidis (n 30).
[33] Pia Rebelo (n 11).
[34] European Investment Bank, 'EIB Template Contractual Clauses on Environmental Matters' (Webpage, December 2014) <https://www.eib.org/attachments/documents/eib_standard_contractual_clauses_on_environmental_information_en.pdf>.
[35] Catriona Henderson, 'The Financing of Green Shipping' (Webpage, October 2018) <https://www.assetfinanceinbrief.com/2018/10/financing-green-shipping/>.
[36] Rebelo (n 11).
[37] Pia Rebelo, 'Poseidon Principles: Legal Directions for Implementation and Enforcement' (2020) 26(2) *Journal of International Maritime Law* 109 ('Poseidon Principles').
[38] Ibid.
[39] '11 Major Shipping Banks Base Lending Decisions on Poseidon Principles' *Manifold Times* (Webpage, 18 June 2019) <https://www.manifoldtimes.com/news/11-major-shipping-banks-base-lending-decisions-on-poseidon-principles/>.
[39] Georgia Boura, 'Poseidon Principles: The Impact on Shipping Finance' (MSc Thesis, University of the Aegean, 2020) ('Boura').
[40] Shravan Bhat and James Mitchell, 'Sustainable Ship Loans Set Sail' *GreenBiz* (Webpage, 20 July 2021) <https://www.greenbiz.com/article/sustainable-ship-loans-set-sail> ('Bhat and Mitchell').

Regarding their scope, the Principles apply to lenders, lessors, financial guarantors (including ECAs), and include all credit products, such as bilateral/syndicated loans, club deals, guarantees, and finance leases concerning vessels falling within IMO's purview, namely ships of minimum 5,000 gross tonnage that are involved in worldwide trade.

Poseidon Principles are based on four pillars. Under principle 1, *Assessment of Climate Alignment*, signatories undertake the responsibility to measure the carbon intensity annually and to assess climate alignment of their shipping portfolios by comparing the CO_2 produced in respect to the established decarbonisation trajectories.[41] However, to do so, signatories can rely only on data that come from classification societies/IMO's recognised organisations. That happens to ensure compliance with the second principle, *Accountability*. Since signatory banks commit to exclusively use the data, sources, and services established by IMO's fuel oil data collection service, their information/assessment is unbiased, practical, and precise and promotes trust in the Principles.[42]

The third principle*, Enforcement,* copes with issues at the contractual level and the necessary consents that shall be given regarding sharing information on vessels' carbon intensity.[43] In fact, Poseidon Principles suggest a form of standardised covenant non-compulsory clause,[44] as an enforcement mechanism, to ensure a continuous compliance with the Principles, which will be constantly updated in the yearly report process.[45] Shipowners using this wording will not have to negotiate such with each lender and, to 'alleviate' any potential parties' concerns, non-compliance of such clause will not constitute an event of default/trigger loan acceleration.[46]
Finally, under principle four, *Transparency,* signatories need to make their status publicly known as members of the Poseidon Principles Association; moreover, they need to annually make reports and publish their portfolio's compliance score. By joining the Poseidon Principles, signatories commit to use this framework through their internal procedures, and their co-operation with their clients/partners.

Additionally, there is no overlap between Poseidon Principles and Green Loans Principles and Sustainability-Linked Loans Principles (see chapter 4.1.2-4.2.2.) meaning that the latter can easily be incorporated in a transaction alongside Poseidon Principles.[47]

Currently, 19 banks which account for USD185 billion have signed up the Poseidon Principles, representing more than a third of the global ship finance portfolio.[48] However, skepticism about the Poseidon Principles being just a 'public relations exercise' has been expressed[49] which is attributed to their lack in enforcement power. However, bearing in mind EIB's initiative, imposing too many requirements from the beginning may make a framework complex, cumbersome, and impractical.[50] Therefore, shipping needed the Poseidon Principles initiative, and, irrespective of whether steady implementation of enforcement mechanisms is desirable, this paper embraces the opinion acknowledging their normative value, as they constitute a crucial private governance tool for achieving green shipping.[51]

3. The Role of Sustainable/Green Finance in Shipping

3.1. Challenges of Sustainable/Green Finance

Although most shipping stakeholders take into consideration ESG factors,[52] it is projected that currently green finance accounts for 10% of the overall ship finance market. How this reluctancy in becoming greener is explained?

[41] As enshrined in Poseidon Principles, *A global framework for responsible ship finance* (Report, August 2022) 19 [2.4].
[42] Boura (n 38).
[43] Victoria Andrıs, Oriol Espar and Begoρa Salas, 'ESG Update' (2021) 4 *Journal of International Banking and Finance Law* 300 ('Andrıs, Espar and Salas').
[44] Poseidon Principles, 'Standard Covenant Clause' (Webpage) <https://poseidonprinciples.org/finance/wp-content/uploads/2020/01/PP-Standard-Covenant-Clause.17.1.20.pdf>.
[45] Rebelo, Poseidon Principles (n 37).
[46] Andrıs, Espar and Salas (n 43).
[47] Ibid.
[48] Global Maritime Forum, *Poseidon Principles: Annual Disclosure Report 2021* (Report, 2021) <https://www.globalmaritimeforum.org/content/2021/12/Poseidon-Principles-Annual-Disclosure-Report-2021.pdf>.
[49] Marie-Anne Moussalli and Ioanna Tsekoura, 'The Poseidon Principles-Part 1-Overview', (Webpage, January 2020) <https://www.clydeco.com/insight/article/the-poseidon-principles-part-1-overview?utm_source=vuture&utm_medium=email&utm_campaign=poseidon%20principles%20updat e%20-%20part%201>.
[50] Rebelo (n 11).
[51] Ibid.
[52] Watson Farley & Williams, *The Sustainability Imperative* (Report, 2021).

First, pressure is mounting on shipping companies to deal with the decarbonisation challenge. However, such transition brings a considerable *financial burden to shipowners.* Based on a relevant empirical study, perhaps one of the largest barriers to green shipping for shipping companies is that current solutions are too expensive and green debt financing available cannot cover the desirable environmental shipping technologies the shipping companies need.[53]

Additionally, another important obstacle is the rise of *competition issues*, since such solutions are expensive, putting companies in a situation to compete against each other. Inevitably, this 'race' comprises a huge hindrance for smaller companies, which tend to have smaller fleet and generate less income and, therefore, cannot compete with larger companies able to pay more for such advanced technology.[54]

Also, these circumstances directly affect the *supply and demand* for ships. On one hand, there will be an increased demand for new environmentally vessels that no longer rely on the use of fossil fuels, whereas on the other hand, conventional vessels will no longer be attractive and there will fewer employment opportunities for specific categories of vessels (e.g. Panamax/Capesize in dry bulk sector, and tankers in liquid bulk sector).[55]

Moreover, green vessels may lead to *extra costs* due to potential breaches of parties' obligations deriving from the charter party agreements (e.g., owing to delays because of slow streaming/deviation for supply of alternative fuels).

Furthermore, financial institutions and investors are threatened by similar risks because of their portfolio of shipping bank loans and/or equity/debt investments in maritime sector. Ship-lending banks may have to deal with *increased default ratio* in ship-related loans since the financial status and cash flow ability of numerous shipping companies that operate vessels in the above-mentioned and possibly highly affected sectors may be significantly deteriorated.[56] Similar is the position of debt and equity holders in shipping companies that still are involved in 'green-obsolete' projects/vessels.[57]

Moreover, the inevitable ship technological obsolescence and the limitation in the cash flow ability of those vessels will contribute to significant *lower asset values.* This reality will bring a 'domino effect' because ships are usually used as security in bank/bond loan agreements,[58] leading to a diminishing value of the main collateral of the agreement and to a highly possible case of default of the credit facility agreement. Because vessels are the main assets of a shipping company, a reduction in their values will constitute a *business risk for the investors* of those companies too.

As for banks/financial institutions, the main challenge is the *lack of enough funding* available. Two main factors have contributed to this reality. First, there is an absence of cooperation between financial institutions which could be justified by the general situation of fewer funds available across most banks due to the pandemic crisis.[59] Second, environmental shipping solutions within the industry are treated with skepticism, because shipping companies/banks have previously invested in green projects that proved less effective than anticipated (e.g., open-loop scrubber technology was introduced to assist vessels align with the 2020 Sulphur Cap, but it was found that it contaminated wash water from scrubber systems).[60] Consequently, new technologies are treated cautiously until it is guaranteed that they will bring long-term effectiveness.

Hence, another important hindrance to green financing is the *short-termism* of banks, financial institutions, and investors.[61] A shift in this line of thinking is necessary to implement green debt financing successfully because environmental protection has an inherently long-term nature.[62] Short-termism is described by Salter as 'the preference for actions in the near-term without consideration of the long-term consequences'.[63] Additionally,

[53] Elisabeth Mathisen, 'Financing the Shipping Industry into a Green Economy: An Empirical Study on the Future of Green Debt Financing within the Shipping Industry' (MSc Thesis, Erasmus University, 2020) ('Mathisen').
[54] Ibid.
[55] Kamvussanos and Tsouknidis (n 30).
[56] Ibid.
[57] Ibid.
[58] Manolis Kavussanos and Ilias Visvikis (eds), *The International Handbook Of Shipping Finance, Theory and Practice* (Palgrave Macmillan, 2016).
[59] Mathisen (n 53).
[60] Ibid.
[61] Patrik Söderholm, 'The green economy transition: the challenges of technological change for sustainability' (2020) 3(1) *Sustainable Earth*.
[62] Elisabeth Mathisen (n 53).
[63] Malcolm Salter, 'How Short-Termism Invites Corruption and What to Do About It' (Working Paper No 12-094, Harvard Business School, 12 April 2012).

banks/financial institutions are trying to recover from *Covid-19,* and in a situation like this, environmentally-related considerations tend to fall towards the back burner.

Lastly, another significant barrier is the need for more sustainability-related *transparency* within shipping. Transparency requires information regarding the green standards and regulations, so as the parties can assess the effect of investments.[64] Additionally, transparency is essential because financiers can 'label' funds as green, irrespective of the scale of present environmental protection.[65] Therefore, banks define their investments based on their discretion, and it is crucial for transparent consensual criteria to be adopted for easier access to the green degree of funding. Nowadays, despite consensual criteria established by numerous institutions/organisations, e.g., Poseidon Principles, a lack of global transparency standards within the shipping industry is noted, leaving room for greenwashing concerns.

3.2. Advantages Of Sustainable/Green Finance for Shipping Stakeholders

First, by virtue of a green/sustainable product, a shipping company can easier implement long-term environmental strategies resulting in its *compliance with the needed regulatory and policy commitments*, as well as a positive impact on the environment.[66]

Second, by participating in green/sustainability-linked products, not only will the company comply with regulation requirements more easily, but it will also gain a *competitive advantage* through adopting and developing corporate resources and capabilities linked to sustainability.

Third, green/sustainability-linked products can assist the parties to have *access to new markets and a wider pool of investors*, particularly to those who aim to focus on ESG projects and maybe even raise funds on relatively favourable terms.[67]

Fourth, in the case of sustainability-linked loans, *more economical debt* may be available because, provided that certain sustainability performance targets are met, the margin on the loan will be reduced, leading to a cheaper cost of capital. The use of debt for improving the sustainability profile of the company, can also lead *to secondary financial benefits*, such as lower operating costs.[68]

Finally, such initiatives positively affect the *image of a company*. By adopting sustainability-linked projects, the company will have a better reputation/creditability, while also it will acquire public acceptance. Additionally, these products promote and develop transparency across the shipping industry, which helps to improve the relationships between shipping players.

Last, the advantages from a *lender's perspective* can be broadly summarised in two important benefits: Because sustainable/green finance gains increasing amount within the financial institutions, which tend to distance from coal, the ability to getting financed through *corporate sustainable lending is desirable.*[69]

4. EU/Market-Based Financial Products: Bonds and Loans Standards

4.1. Bonds: Green Bonds and Sustainability-Linked Bonds

4.1.1. Green Bonds

Green bonds have been embraced as a trailblazer for green finance since their beginning in 2007, when EIB issued 'a climate awareness bond' that has been extensively viewed as the first fixed-income product linked to ESG

[64] Elisabeth Mathisen (n 53).
[65] Ibid.
[66] Ibid.
[67] Jeremy Cross and Amira Hajili, 'ESG and Green Loans: Some Perspectives' (Webpage, October 2020) <https://www.lexology.com/library/detail.aspx?g=d2fa5901-aff0-4558-8721-5b3010d8928c#:~:text=%20ESG%20and%20Green%20Loans%3A%20Some%20Perspectives%20,therefore%2C%20that%20funds%20and%20lenders%20do...%20More%20>.
[68] Watson Farley & Williams, 'The Rise of Green and Sustainability Linked Loan Financing' (Webpage, 8 November 2019) <https://www.wfw.com/articles/the-rise-of-green-and-sustainability-linked-loan-financing/>.
[69] Ibid.

investments.[70] Nowadays, their volume accounts for USD481.8 billion.[71] Green bonds are typical bonds, namely debt instruments issued by public/private institutions to finance themselves and differentiate from classic/conventional fixed-income securities in the sense that issuer pledges that the proceeds will solely be used to finance projects bringing a positive environmental effect.[72]

In the absence of a worldwide accepted classification/reference standard, the bond market presently is based upon governance status.[73] This challenge has been addressed by ICMA, which in 2014 issued the Green Bond Principles, constituting the first voluntary guidelines to encourage transparency, disclosure, and integrity in green bond market by elucidating the process for green bonds issuance.[74]

Green Bond Principles are governed by four components, namely (i) use of proceeds, (ii) process for project evaluation/selection, (iii) management of proceeds, and (iv) reporting.[75] The Lydia stone of green bonds is the use of proceeds for environmental projects and such use should be outlined appropriately in the (re)finance documentation along with the expected environmental benefits, and, when/if possible, such advantages should be quantified by the issuer.[76] The principles provide for a non-exhaustive list that includes indicative eligible categories for green projects, such as renewable energy, energy efficiency, pollution prevention/control etc., which contribute to environmental objectives, such as climate change mitigation, climate change/adaptation, natural resource conservation and biodiversity.[77]

Based on the second principle, there must be an evaluation/project selection process, by virtue of which investors will be provided with (i) the necessary information to assess the environmental sustainability objectives of the project(s), (ii) the procedure the issuer employed to determine how the project 'qualifies' as green, and (iii) any supplementary information by which the issuer acknowledges environmental risks deriving from the project. Additionally, issuers should include environmental sustainability-linked information within their objectives/strategy, and they are also encouraged to provide information regarding the compliance of projects with official/market-based taxonomies, publicise any green standards/certifications referred within the project selection, and incorporate a procedure to identify 'mitigants' (e.g., trade-off analysis) to any potential adverse social/environmental consequences of the project.[78]

Furthermore, investors, based on the third principle, shall be informed about the management of proceeds. In fact, net proceeds of green bonds must be credited to a sub-account/sub-portfolio or be tracked in a suitable way and certified by the issuer in a formal internal process which relates to the lending/investment operations for qualifying green activities.[79] Moreover, if the green bond is pending, the balance of the tracked net proceeds should be checked on a regular/periodical basis to match allocations to suitable green projects at that timeframe; additionally, the issuer should communicate to the investors any non-permanent placement for the balance of unallocated net proceeds. To promote transparency, Green Bond Principles recommend that issuers' management of proceeds use the assistance of an external auditor/a third party to check the internal tracking method and allotment of proceeds.

Lastly, in line with the principles' reporting requirements, issuers are encouraged to update their information regarding the use of funds annually. The report should include a list of the green projects, as well as a brief description of such including the amounts allocated and their potential impact. However, in case there are confidentiality agreements and competitive considerations regarding the projects, such information shall be presented in a broader way or on an aggregate portfolio basis.[80]
Apart from the abovementioned core principles, Green Bond Principles encompass two extra recommendations for increased transparency, namely (i) the alignment of green bonds with a Green Bond Framework and (ii) the

[70] Torsten Ehlers and Frank Packer, 'Green Bond Finance and Certification 2017' (2017) *BIS Quarterly Review* 89.
[71] Patturaja Murugaboopathy, 'Global Issuance of Sustainable Bonds Hits Record in 2021' (Webpage, 23 December 2021) <https://www.reuters.com/markets/commodities/global-markets-esg-2021-12-23/>.
[72] Serena Fatica and Roberto Panzica, 'Green Bonds as a Tool against Climate Change?' (2021) 30(5) *Business Strategy and the Environment* 2688.
[73] Serena Fatica, 'Financing a Sustainable Recovery with Green Bonds' (Webpage, 2020) <https://joint-research-centre.ec.europa.eu/system/files/2020-11/jrc122441_gb_scienceforpolicybrief_revised1.pdf>.
[74] International Capital Market Association, 'The Green Bond Principles' (Webpage) <https://www.icmagroup.org/sustainable-finance/the-principles-guidelines-and-handbooks/green-bond-principles-gbp/>.
[75] Simon Thomson, *Green and Sustainable Finance: Principles and Practice* (Kogan Page LTD, 2021).
[76] International Capital Market Association, *Green Bond Principles: Voluntary Process Guidelines for Issuing Green Bonds* (Report, June 2021) 4.
[77] Ibid.
[78] Ibid 5.
[79] Ibid 6.
[80] Ibid.

appointment of external review providers to examine/assess the pre-issuance external review and the compliance of their Green Bond Framework with the four elements of the Principles.[81]

Recently, A.P. Moller-Maersk A/S, the biggest container-shipping company internationally, issued its first green bond and gathered USD566 million at 'a record-low coupon' of 0.75%.[82] The proceeds will be utilised for the acquisition of a small feeder ship and eight large methanol-fueled vessels.[83] In fact, Copenhagen-based Maersk launched its Green Finance Framework for issuing various sustainable financing instruments, and appointed Cicero Shades of Green AS to review its alignment/compliance with the Green Bond Principles and the Green Loan Principles.[84] Based on the overall evaluation, Maersk's Framework was awarded a 'Cicero Medium Green shading and a governance score of Excellent'.[85]

Soon, other companies followed, such as Evergreen, the giant shipping company from Taiwan. In April 2018, Evergreen issued its first green bond as part of its environmental/sustainability agenda, thereby complying with Taiwan's green finance policy.[86] Evergreen's green bond has a maturity of five years, an annual yield of 0.86% and will raise USD65.7, which will be used to ameliorate its fleet energy efficiency and promote emission-reduction/sustainable developments, mainly by installing scrubbers on 20 company's containerships.[87]

4.1.2. Sustainability-linked Loans

In June 2020, ICMA published the Sustainability-linked Bond Principles[88] which, like their 'predecessors', Green Bond Principles, constitute voluntary recommendations of market best practice. Sustainability-linked bonds aim to complement green bonds by attracting more issuers towards sustainable finance, since they target investors which have an overall ESG strategy and only those involved solely with green projects. Sustainability-linked bonds are defined as 'any type of bond instrument for which the financial and/or structural characteristics can vary depending on whether the issuer achieves predefined sustainability/ESG objectives'.[89] Those objectives are '(i) measured through predefined Key Performance Indicators ('KPIs'), and (ii) assessed against predefined Sustainability Performance Targets ('SPTs')'.[90]

Specifically, the Principles consist of five core components, namely (i) selection of KPIs, (ii) calibration of SPTs, (iii) bond characteristics, (iv) reporting and (v) verification.[91] KPIs are a cornerstone to the operation of sustainability-linked bonds because they are the means through which the issuer's sustainability performance is measured. Therefore, the credibility of sustainability-linked bonds depends on KPIs. Those indicators should be, first, relevant, core, and material to the issuer's overall strategy/operations; second, measurable/quantifiable on a specific methodology; third, externally verifiable; and fourth, able to benchmark (e.g., by using an external reference/definition to benchmark SPTs' ambition level). Issuers are encouraged to inform their investors about the reasoning in choosing KPIs and include relevant baseline/historical data to facilitate benchmarking against their historical performance.[92] Additionally, it is recommended to include a definition of KPIs along with their applicable scope (e.g., percentage of issuer's emissions to which the goal applies) and calculation mechanism (e.g., benchmarked against a market standard).[93]

Second, calibrating SPTs for each KPI is pivotal to the structure of sustainability-linked bonds, as SPTs are an expression of the level of ambition the borrower is ready to commit. For sustainability-linked bonds to satisfy their purpose, SPTs should be ambitious but also realistic. Regarding ambitiousness, SPTs must bring a material improvement regarding KPIs and be beyond 'Business-as-Usual trajectory', be feasible and be compared to a benchmark/an external reference, be core to the borrower's business and consistent with his overall sustainability/ESG strategy, and be determined on a predefined timeline set before (or simultaneously with) the

[81] Ibid 7.
[82] Christian Weinberg, 'World's Biggest Shipping Company Makes History With Green Bond' (Webpage, November 2021) <https://www.bloomberg.com/news/articles/2021-11-19/world-s-biggest-shipping-company-makes-history-with-green-bond>.
[83] Ibid.
[84] 'Maersk Issues First Green Bond to Fund First Green Methanol Vessels' (Webpage, November 2021) <https://www.maersk.com/news/articles/2021/11/19/maersk-issues-first-green-bond-to-fund-first-green-methanol-vessels>.
[85] Ibid.
[86] 'Evergreen the Second Shipping Firm to Launch Green Bonds' *Safety4Sea* (Webpage, July 2018) <https://safety4sea.com/evergreen-the-second-shipping-firm-to-launch-green-bonds/>.
[87] Jason Jiang, 'Evergreen Issues %65.7 of Green Bonds' *Splash247* (Webpage, June 2018) <https://splash247.com/evergreen-issues-65-7m-green-bonds/>.
[88] International Capital Market Association, *Sustainability-Linked Bond Principles: Voluntary Process Guidelines* (Report, June 2020).
[89] Ibid 2.
[90] Ibid.
[91] Ibid 3.
[92] Ibid.
[93] Ibid.

issuance of the bond.[94] Sustainability-linked bonds also stress that the target-setting assessment should be based on a mixture of approaches, namely issuer's historical performance, issuer's peers and by reference to science/official (inter)national goals or to acknowledged best-available-technologies.

Moreover, the disclosures on target-setting shall clearly refer to, first, the timeframe for the goal attainment; second, the verified baseline or reference point chosen for improvement of KPIs/KPIs rationale under which reassessments/pro-forma adjustments of baselines will happen; third, how issuers aim to meet such SPTs (after considering competition/confidentiality concerns); and, fourth, any other key element that may fall out issuer's direct control but can seriously affect the achievement of the SPTs.[95] This information should be part of the issuer's objectives, policy and/or strategy regarding ESG.[96]

Furthermore, Sustainability-linked Bonds Principles recommend that issuers should appoint an external reviewer to assess the compliance of sustainability-linked bond with its five core components, through the assistance of a second-party opinion. In the pre-issuance second party opinion, an external reviewer should examine the relevance, robustness, and credibility of the KPIs, the reasoning/ambition of the suggested SPTs, and the reliability of the proposed strategy. In case any material change regarding KPI methodology or SPT calibration is noted, issuers should ask external reviewers to evaluate such changes.[97]

Third, the keystone of a sustainability-linked bond is that it constitutes a product, the financial characteristics of which may fluctuate depending on whether the proposed KPIs achieve the predefined SPTs (e.g., potential step-up/step-down variation of the coupon or change in maturity date of the bond); and, therefore, this change will constitute the trigger event(s) for such variation.

Fourth, issuers of sustainability-linked bonds are burdened with reporting obligations. Bonds issuers are expected to publish and keep updated information regarding the performance of the chosen KPIs, as well as a verification assurance report concerning SPTs. Additionally, their reporting obligations include the assessment of the performance against the SPTs, and, generally, any information allowing investors to oversee SPTs' ambition level.[98] This information should be published at least annually and regarding any time relevant to assessing SPT's performance that may adapt the bond's characteristics.

Last, concerning the requirement of verification that is imposed, issuers should prefer independent/external verification of the KPIs' performance regarding SPTs, which will be undergone by a qualified external review expert. Likewise, such review shall take place annually—at least—and for any date/period relevant to assessing the SPTs performance contributing to a potential adjustment. Furthermore, this post-issuance verification shall be public and, in contrast to pre-issuance review, post-issuance review is a necessary component of sustainability-linked bonds.[99]

The first sustainability-linked bond was issued by the Norwegian company Odfjell in January 2021.[100] The bond issue size was NOK850 million (approximately USD100 million) with a maturity date set in January 2025.[101] Specifically, the bond proceeds will be mobilised to minimise the carbon intensity of the company's fleet by 50% between 2018 and 2030. If the CO_2 goal is not attained, investors will be forced to pay 1.5% extra on the principal amount lent.

Furthermore, container shipping company Seaspan Corporation closed its first sustainability-linked bond with a duration of three-year term, which in April 2021 was followed with a USD300 million five-year issue.[102] Both of those sustainability-linked bonds are unsecured, and the proceeds earned will be utilised to refinance current

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[94] Ibid.
[95] Ibid 4.
[96] Ibid.
[97] Ibid.
[98] Ibid 5.
[99] Ibid.
[100] Naida Hakirevic Prevljak, 'Norway's Odfjell Places Shipping's 1st Sustainability-Linked Bond' (Webpage, January 2021) <https://www.offshore-energy.biz/norways-odfjell-places-shippings-1st-sustainability-linked-bond/>.
[101] Ibid.
[102] Gary Dixon, 'Future Finance: Odfjell Is First Shipowner to Sell Sustainability-Linked Bond in $100m Deal' *Tradewinds News* (Webpage, January 2021) <https://www.tradewindsnews.com/finance/future-finance-odfjell-is-first-shipowner-to-sell-sustainability-linked-bond-in-100m-deal/2-1-944922>.

bonds/general corporate purposes.[103] In Seaspan's case, the SPTs/KPIs are linked to expenses on vessels that could be powered by new/alternative fuels.[104]

4.2. Loans: Green Loans and Sustainability-linked Loans

4.2.1. Green Loans

The green loan market is still in its infancy; however, green loans have experienced a five-fold volume increase since 2014, and such rapid rise can be attributed to the release of Green Loan Principles, which were launched in 2018.[105] Green Loan Principles, along with the guidance published in 2020, known as Guidance on Green Loan Principles,[106] constitute a voluntary set of rules/criteria that can be used by market participants on a deal-by-deal basis to assess whether a loan agreement qualifies as 'green'. According to Green Loan Principles, a green loan is 'any type of loan instrument made available exclusively to finance/re-finance, in whole or in part, new and/or existing eligible projects'.

Green loans share the same characteristics with green bonds; however, certain extra issues deriving from the loan agreements' idiosyncrasy need to be highlighted. First, regarding the review requirements, there is an alternative way of review, namely the *self-certification* of the borrower. Traditionally, the loan market is a relationship-driven market, and lenders usually have long relationships with their borrowers and know about their activities.[107] Therefore, self-certification by a borrower who has shown that he possesses the expertise to be aligned with the principles may suffice; however, borrowers are strongly urged to document such expertise, communicate it to the participating institutions, and, if possible/appropriate, make it publicly available.[108] In case lenders are not aware of the borrower/its activities, borrowers cannot prove that they possess sufficient internal expertise, or lenders lack appropriate internal expertise, then an external review shall be preferred.[109]

Second, emphasis should be put on the *terms* of the loan contracts. Nowadays, there is no current template wording for green clauses and relevant documentary requirements.[110] That means that such agreements will be finalised based on the needs of each case. However, there are certain provisions that need to be included when preparing such documents, namely (i) a list with the eligible green projects, in the part of the agreement relating to purpose/use of proceeds, (ii) information undertakings/covenants concerning green projects, that need to be distinctly identifiable in the loan agreement, (iii) an undertake that borrowers are obligated to provide accurate reporting, and (iv) a green breach provision.[111] Notably, there is not a template term regarding what constitutes a 'green breach', but since the use of proceeds is the core element in a green loan, any related breach should be taken seriously. In case of such breach,[112] the loan is no longer considered green from the date of such occurrence and is subject to any cure rights; parties will decide whether such a failure will constitute a triggering event of default and a successive cross-default across other outstanding loan agreements.[113]

Additionally, when a green loan has been applied to a project deemed to be green on the outset but afterwards lost its capacity to be characterised as such (e.g., because circumstances changed), the parties are entitled to exclude such project.[114] However, Green Loan Principles do not provide for a scenario where the parties do not agree on how to recategorise the project.[115]

Lastly, in relation to the parties and types of green loans, there is no limitation/exclusion as to whom a borrower in a green loan can be,[116] whereas green loans can be divided into two categories (i) those where the borrower identifies from the start a particular green project to be financed and the proceeds will be used towards that project,

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[103] Robert Lustrin, 'Winds Are Blowing in Sustainability-Linked Bond Sails' (Webpage, November 2021) <https://www.maritimelondon.com/news/winds-are-blowing-in-sustainability-linked-bond-sails#_ftn7>.
[104] Ibid.
[105] Loan Syndications and Trading Association, *Green Loan Principles* (Report, February 2023) ('*Green Loan Principles*').
[106] Loan Syndications and Trading Association, *Guidance on Green Loan Principles* (Report, February 2023) ('*Guidance on Green Loan Principles*').
[107] Loan Syndications and Trading Association, *Green Loan Principles* (n 105).
[108] Ibid.
[109] Loan Syndications and Trading Association, *Guidance on Green Loan Principles* (n 106).
[110] Ibid.
[111] Loan Syndications and Trading Association, *Green Loan Principles* (n 105).
[112] Kathryn Emmett et al, 'Comparing Sustainable Debt Products and Standards' (2021) 4 *Journal of International Banking and Finance Law* 296.
[113] Loan Syndications and Trading Association, *Guidance on Green Loan Principles* (n 106).
[114] Ibid.
[115] Linklaters, *The Rise of Green Loans and Sustainability Linked Lending: Where Are We Now?* (Report, 2020).
[116] Loan Syndications and Trading Association, *Guidance on Green Loan Principles* (n 106).

and (ii) those where no such project exists at the time the facility agreement is entered into force but they will be identified later, meaning that a revolving loan can qualify as green.[117]

Green loans in shipping have indeed started to 'set sail'. In December 2018, BNP Paribas signed a USD40 million loan agreement to finance the purchase/installment of exhaust gas cleaning systems to comply with IMO's sulphur cap on vessels owned by Quantum Pacific Shipping and managed by Easter Pacific Shipping, accounting for the first green loan provided to a company in the Asia Pacific area.[118] The green loan facility along with the environmental/social agenda of the abovementioned companies were assessed by second-party opinion company Vigeo Eiris,[119] and it was verified that the loan agreement followed the Green Loan Principles.[120]

4.3. Sustainability-linked Loans

Sustainability-linked loans have seen a substantial increase in volume[121] since the introduction of the Sustainable-Linked Loans Principles in 2019, outstripping the volume of green loans.[122] Like green loans, sustainability-linked loans assist in the development of an environmentally and socially sustainable economy by providing recommendations which highlight the key characteristics of these loans. In that vein, Sustainability-Linked Loan Principles, along with the relevant Guidance on Sustainability-Linked Loan Principles[123] were issued. According to Sustainable-Linked Loans Principles, sustainability-linked loans are defined as 'any type of loan instruments…which incentivise the borrower's achievement of ambitious, predetermined sustainability performance objectives'.

Sustainability-linked loans are based on the same criteria as sustainability-linked bonds but 'translated' into loan products, i.e. (i) selection of KPIs, (ii) calibration of SPTs, (iii) loan characteristics, (iv) reporting, (v) verification. As for the documentary requirements, like green loans, there is no current fixed wording available to be used regarding sustainability-linked loan documentation.[124] Therefore, each case will depend on its own characteristics. Since the cornerstone of sustainability-linked loans is that the economic result depends on whether the predefined SPTs/KPIs are met, when drafting a sustainability-linked loan, parties should include relevant and clear terms about KPIs selection and SPTs calibration, mainly the source and the target of KPIs/SPTs, transparency on the way and reasoning as to why a KPI has been included,[125] and the way improvement methods are measured (e.g., improvement is translated into a change in metric's value and not as a percentage change in that metric).[126]

Additionally, because KPIs may fail to be relevant over time due to changes to borrower's business endure or other factors, such as extraordinary events or regulatory framework changes, parties may need to take into consideration amendments accordingly.[127] Therefore, provisions need to be included in the sustainability-linked loans to explicitly explain and set out the conditions based on which the borrower is entitled to proceed with updates/changes of KPIs/SPTs definition or calibration to comply with the sustainability commitments.[128]

Furthermore, covenants/undertakings are also included, mainly focusing on (i) reporting requirements of the metrics that shall be clearly set out and borrower should provide at least a yearly reporting, (ii) information undertakings/sustainability reporting, in the sense that information undertakings relevant to SPTs should be distinctly identifiable (e.g., requirement to deliver annually a sustainability report to lenders for the whole life of the loan), and (iii) representations, meaning that borrower shall be under the obligation of any reporting.[129]

Lastly, a sustainability-linked loan should incorporate a provision relating to a 'sustainable' breach and, due to lack of an established standard market, parties should draft the relevant term clarifying which consequences will

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[117] Ibid.
[118] Watson Farley & Williams, 'WFW Advises on First Green Loan to Asia Pacific Shipping Company' (Webpage, December 2018) <https://www.wfw.com/press/wfw-advises-on-first-green-loan-to-asia-pacific-shipping-company/>.
[119] Ibid.
[120]Justin Boyd, 'Green Finance & the Shipping Industry' (Webpage, August 2019) <https://mercatis.law/2019/08/05/green-finance-the-shipping-industry/>.
[121] Jeremy Duffy et al, '2021: The Year of the Sustainability-Linked Loan' *Journal of International Banking and Finance Law* 675 ('Duffy').
[122] Loan Syndications and Trading Association, 'Sustainability Linked Loan Principles: Supporting an Environmentally and Socially Sustainable Economic Activity' (Webpage) <https://www.lsta.org/content/sustainability-linked-loan-principles-sllp/>.
[122] Linklaters (n 115) 12.
[123] Loan Syndications and Trading Association, *Guidance on Sustainability Linked Loan Principles* (Report, February 2023) ('Guidance on Sustainability Linked Loan Principles').
[124] Ibid.
[125] Linklaters (n 115).
[126] Loan Syndications and Trading Association, *Guidance on Sustainability Linked Loan Principles* (n 123) 5.
[127] Ibid 3.
[128] Ibid.
[129] Ibid.

occur if the borrower fails his obligations.[130] In practice, a failure of meeting the SPTs is not treated as an event of default, but rather it has an economic result (e.g., margin premium).[131] However, usually a reporting breach (e.g., failure to deliver information) may constitute a breach but this will typically be left to 'the interpretation of the reporting representations and covenants in the agreement'.[132]

Generally, the pricing of sustainability-linked loans in the beginning was based on 'one-way structure', whereas nowadays there are the more sophisticated 'two-way structures'.[133] Shortly, early sustainability-linked loans were documented on a 'one-way' pricing basis, meaning that if the borrower satisfied pre-determined ESG targets, a discount was applied to the margin payable on the loan and there was no impact in case he failed to do so/in the event his ESG performance was declining.[134] Contrariwise, in 'two-way' pricing structures, an improvement in ESG still leads to a discount to the margin on the loan, but if the borrower's overall ESG performance drops instead of improving, then a premium would be added to the margin instead of a reduction.[135]

Furthermore, as market continues to evolve, there are two main features that sustainability-linked loans tend to include. First, on numerous transactions a prescriptive payment regime is included, requiring for the amounts represented by pricing changes on the loan to be used in a specific way (e.g., to reinvest in ESG performance).[136] Second, sustainability-linked loans can be difficult to 'future-proof' for challenges that may arise.[137] Guidance on Sustainability-linked Loans notes that such provisions should be incorporated; however, many facility agreements do not include such, mainly because lenders are reluctant in allowing borrowers to change provisions that have a direct impact on pricing without their consent.[138]

Lastly, according to Sustainability-linked Principles, any company can borrow a sustainability-linked loan in the bilateral/syndicated loan market, provided that it has a sustainable strategy rewarding the company for achieving such goals; moreover, a sustainability-linked loan can be any type of loan. Additionally, apart from the borrower and the lender, it has become increasingly common on sustainability-linked loans transactions that one or more of the lenders are appointed as a 'sustainability coordinator or sustainability structuring agent', the role of whom is to assist in the 'dialogue' between the borrower and the lender group for any possible enquiry it may arise.[139] Based on the Guidance, if a Bank serves under this capacity, it does not undertake fiduciary duties to the rest of the syndicate of the lenders.

In March 2021, Singaporean oil tanker owner/operator Hafnia Limited signed a USD374 million sustainability-linked senior secured term loan and revolving credit facility with a syndicate of 10 banks.[140] The agreement included an adjustment interest rate mechanism that depended on company's continuous improvement in emissions-related KPIs, which include IMO's decarbonsation target and are aligned with Poseidon Principles. Additionally, on April 2021, Peacock Container secured a USD240 million sustainability-linked loan, the proceeds of which were used to refinance Peacocks' current fleet of 18,000 tank containers and the assets acquisition of containers in May 2021.[141] The loan agreement included senior term loans to robust the refinancing of Peacock's existing fleet and revolving credit facilities providing flexibility to assist the company's plans.[142]

Moreover, in June 2021, Standard Chartered executed a ten-year sustainability-linked loan to CSSC (Hong Kong) Shipping Company Limited (CSSC Leasing) for purchasing 4 container ships with a total loan value of USD96 million.[143] The transaction aligns with the principles, and during the loan, the efficiency ratio of the ships will be assessed and other sustainability-linked indicators will be used.[144]

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[130] Ibid 5.
[131] Linklaters (n 115) 12.
[132] Loan Syndications and Trading Association, *Guidance on Sustainability Linked Loan Principles* (n 123) 5.
[133] Linklaters (n 115) 12.
[134] Ibid.
[135] Linklaters (n 115).
[136] Ibid 15.
[137] Ibid.
[138] Linklaters (n 115).
[139] Loan Syndications and Trading Association, *Guidance on Sustainability Linked Loan Principles* (n 123).
[140] Bhat and Mitchell (n 40).
[141] Megawati Wijaya, 'Peacock Container Secures $240m Sustainability Linked Loan' *Lloyd's List* (Webpage, April 2022) <https://lloydslist.maritimeintelligence.informa.com/LL1140401/Peacock-Container-secures-$240m-sustainability-linked-loan>.
[142] Stephenson Harwood, 'Stephenson Harwood (Singapore) Alliance Advises on US$200 Million Financing' (Webpage, September 2021) <https://www.shlegal.com/news/stephenson-harwood-(singapore)-alliance-advises-on-us$200-million-financing>.
[143] 'Standard Chartered Executes First Sustainability-Linked Loan to CSSC (Hong Kong) Shipping Company Limited' (Webpage, June 2021) <https://av.sc.com/cn/content/docs/cn-executes-first-sustainability-linked-loan-to-cssc-shipping.pdf#:~:text=While%20the%20shipping%20industry%20connects%20global%20trade%20and,strategic%20plan%20in%20the%20area%20of%20sustainable%20developmen>.
[144] Ibid.

Last, Piraeus Bank S.A. provided a USD16.85m sustainability-linked loan to a subsidiary of the Seanergy Maritime Holdings Corp., a Nasdaq-listed company in Greece specialising in dry bulk cargo.[145] The loan agreement provided for a margin adjustment mechanism regarding the carbon intensity rating that will work as an incentive for shipowners to minimise carriers' carbon emissions; it also included disincentives for non-compliance.[146] Reasonably, one can argue that 2021 has been the year of the sustainability-linked loans for shipping.[147]

4.4. Concluding Remarks

Based on the above cases showing us the maritime reality, two important conclusions are made. First, even though loan standards/principles were introduced later than bonds, loans have been utilised more. Such outcome does not surprise us if we consider the history of shipping finance, and the 'safety' shipping companies feel towards lending. Additionally, one should bear in mind that bonds — and, generally, equity — aligns better with the sustainability goal due to its long-term nature than debt financing which is by nature short-term.

Second, we noted that regarding lending, sustainability-linked financing has been more common than green. That happens because sustainability-linked loans affect the margin/pricing of the loan, and they are more flexible tools that can be incorporated using numerous methods. For instance, parties can create a medium/long-term decarbonisation business strategy, set climate targets (e.g., by reference to Environmental Ship Index), adopt plans concerning sustainable fuel types (e.g., LNG/or other low-emission engines) or invest/adopt emission reducing designs and technologies.[148]

Contrariwise, *green loans* often take the form of a green tranche within a wider facility or an up-size facility to finance a particular part of a vessel, such as scrubbers, ballast water treatment systems, propeller cap fins or cover research and development expenses.[149]

Overall, stimulating sustainability performance targets is not an easy task and it could be argued that it is 'part art and part science'.[150] In fact, although shipping constitutes a market that is well suited to such products (especially loans), practice shows that the maritime sector has not yet exploited such opportunities to their full potential.[151]

5. Policy and Market-Based Products Proposals

After explaining the current regime, it is time to critically assess the same and chart a course forward. The key issue is to identify the current obstacles towards green shipping finance and whether the current system is well-equipped to overcome them.

First, perhaps the most important challenge in achieving the shipping agenda was the lack of a unanimous definition of what constitutes 'green maritime activity'. After the inclusion of the maritime sector within the EU Taxonomy Regulation, it could be argued that such an issue does not exist anymore. However, despite shipping officially falling within the EU Taxonomy Regulation, (I believe that) it would be a milestone to develop an *international shipping taxonomy concerning green shipping.*

The reasoning is twofold: firstly, EU Taxonomy refers only to EU interests, whereas shipping is an international sector; secondly, while the Regulation has been lauded as pioneering, certain shipping shareholders have critisised the Taxonomy Regulation[152] and its shipping technical screening criteria as unable to assess the industry's needs. Though debatable, this criticism is a reasonable starting point, as the Regulation affects all the polluting sectors and is not targeted at shipping needs. In this respect, IMO, as the agency responsible for shipping, could contribute to such initiative; however, since the taxonomy will not be created in a legal vacuum and its purpose will be to assist in the robustness of green shipping finance, the efforts of IMO should be accompanied by engagement from other experienced/competent financial institutions/stakeholders since the UN agency is not the most appropriate body to determine rules relating to the financial sector. Undeniably, preparing an international instrument will not

[145] 'WFW Advises Piraeus Bank on First Sustainability-Linked Loan' *Hellenic Shipping News* (Webpage, 2 December 2021) <https://www.wfw.com/press/wfw-advises-piraeus-bank-on-its-first-sustainability-linked-loan/>.
[146] Ibid.
[147] Duffy (n 121).
[148] Watson Farley & Williams, 'Sustainable Finance and Shipping' (n 12).
[149] Stephenson Harwood, *Green Shoots in ship finance: The rise of the green finance revolution* (Report, October 2020) ('Stephenson Harwood').
[150] Watson Farley & Williams, 'Sustainable Finance and Shipping' (n 12).
[151] Ibid.
[152] Union of Greek Shipowners (n 26).

be an easy task, but EU Taxonomy could be a useful starting point of reference (along with all relevant green shipping initiatives). Additionally, from a substantive point of view, it would be a useful and necessary measure since no shipping-related issue can be addressed effectively at a regional level.

Second, currently there are many standards to be used for green/sustainability-linked products, with the ones offered by LMA and ICMA being the most dominant due to their simpler requirements. However, green/sustainability-linked products specific to shipping could be employed. In this way, maritime stakeholders would feel more secure in utilising financial products specifically designed for their needs.

Furthermore, template clauses should be drafted, such as preparing a term regarding the definition of what constitutes a 'green breach' to fill any current documentary lacunae. The initiative could be undertaken by the parties which already created the market-based products with the cooperation of a maritime body, such as BIMCO, which is the shipping organisation that assists in the drafting of terms/agreements within the maritime industry. In fact, it has already prepared clauses regarding reduction of GHG emissions (e.g., 2020 Marine Sulphur Content Clause, 2020 Fuel Transition Clause). Developing such products and documentation will require time and effort, but it constitutes a realistic solution, without causing practical issues or raising any concern. Additionally, such clauses would be heavily used in practice and would alleviate the concerns of investors/lenders, making investing in shipping green projects easier and safer.

Third, from all the shipping initiatives, Poseidon Principles could be a game changer regarding green debt finance albeit as already mentioned Principles lack 'teeth'. Consequently, a transformation from an early normative concept to an enforceable loan-agreement is proposed. As pointed out by Rebelo, the Principles do not provide for consequences in case of non-compliance with the covenant clause. Although such approach may be more attractive to shipping companies by giving them flexibility and can be justified in the early stages of implementation, relevant guidance is necessary since commercial parties do not appreciate vague and blurry situations. From a contractual standpoint, the covenant clause neither goes 'to the heart of the contract' to justify the right of repudiation, nor eliminates the sustainability character of the contract; however, the Technical Guidelines of Poseidon Principles should include a provision regarding the breach of the clause, e.g., explaining that such a breach constitutes an event of default.[153]

Additionally, loan agreements should be drafted cautiously to include Poseidon Principles objectives.[154] Indicatively, in the definitions section, the notions of 'assessment of climate change' and 'carbon intensity' should be included; in the section 'the loan and its purpose' Poseidon Principles objectives should be incorporated with reference to the loan purposes for the 'financing of green shipping'; furthermore, in the 'conditions precedent' area, it should be mentioned that consumption data must be collected/reported in accordance to Annex VI of MARPOL; moreover, the borrower can warrant that he/she has provided the lender with all the necessary reports/information regarding environmental matters which have been confirmed by a recognised organisation; finally, 'events of default' clauses could be provided with enhanced remedy in case the condition precedents/warranties/covenants are breached.[155]

Certain additional steps can be taken. Currently, there are *no regulatory measures* obliging financial institutions to provide a certain minimum percentage of green/sustainable (shipping) finance. Therefore, regulations/legislative measures are expected at national/EU level to cope with this concern, mainly through granting fiscal incentives, such as providing reduced capital charges for lenders that promote green/sustainable finance.[156]

Additionally, *ECA assistance* to domestic shipyards for purchasing the building of zero/low-emissions vessels may serve as a catalyst in motivating banks and promoting investments in green-related projects. For instance, the Norwegian ECA Eksfin contributed to the 'green shift at sea' by granting loan guarantees of EUR1billion for constructing 35 eco-friendly vessels.[157]

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[153] Rebelo, Poseidon Principles (n 37).
[154] Ibid.
[155] Ibid.
[156] Stephenson Harwood (n 149).
[157] 'Eksfin Provides Financing on Green Ship Projects' (Webpage, 2 September 2021) *Cruise Industry News* <https://www.cruiseindustrynews.com/cruise-news/25769-eksfin-provides-financing-on-green-ship-projects.html#:~:text=Norwegian%20export%20credit%20agency%20Eksfin%20%28formerly%20Export%20Credit,years%20%E2%80%93including%20the%20Le%20Commandant%20Charcot%20for%20Ponant>.

Lasty, another important step would be to make the pool of green/sustainability-linked financing *available/appealing to smaller shipping companies* also. Therefore, government intervention may be needed,[158] as well as the adoption of a relatively sustainable finance legislative measure/regime specifically targeting the needs of such companies.

6. Conclusion

Greening the shipping industry though finance is not an easy task since significant barriers and challenges, such as financial burdens, short-termism, greenwashing, disclosure/transparency issues, need to be dealt with. However, the author remains optimistic that linking green/sustainability-linked finance/products with the maritime industry will be the 'antidote' of overcoming any hesitation and achieving a zero-emissions future. Surely, further steps could be taken, such as the adoption of an international shipping taxonomy system and shipping-targeted financial products/template terms, but, overall, the current situation is promising. Shipping companies have started taking advantage of the green/sustainability-linked products, allowing the green shipping era to 'start to sail'. It is still early to evaluate the effectiveness/success of such products, but it seems that the maritime stakeholders have started increasingly to realise the potential of green/sustainability-linked products, especially loans.

[158] Stephenson Harwood (n 149).