



GREEK SHIPPING INDUSTRY AS A DRIVING FORCE FOR GREECE'S ECONOMIC GROWTH AND GLOBAL ENERGY TRANSITION

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Abstract: The research paper studies the problems of sustainability and the green transition in Greece and worldwide through the lens of the shipping industry's development. We have conducted a systematic analysis of the literature, economic and financial data, and the EU legislative framework to develop a model of the Greek shipping industry's multipliers and to formulate policy recommendations for the government of Greece. We have shown that the global leading position of Greek shipping can be not only a powerful engine for the Greek economy's development and green transition but also a driver for the global Energy Transition and sustainability. We worked out the model of interconnected multipliers of the Greek shipping industry to the national economy. It permits a deeper understanding of the necessary policy measures within the EU legislative environment and the New Industrial and green transition strategy for Greece. The paper presents the rationale for the New Industrial Strategy for Greece, considering the Greek shipping industry's leading global position, and outlines a system of policy recommendations.

Keywords: Greek shipping industry, New Industrial Policy, global Energy Transition, green transition, global competitiveness in shipping

JEL: E01, E02, E62, F14, F16, F32, F34, F4, O1

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1. Introduction

Amidst the challenging external conditions – geopolitical upheavals, trade wars, fierce global competition and the need for Energy Transition – the Greek Ministry of Foreign Affairs is doing tremendous successful work in economic diplomacy and the implementation of the National Strategic Plan for Extraversion². As the Minister of Foreign Affairs said, “we need to be actively promoting international cooperation with pragmatism and confidence, characteristics that our nation has always drawn from its outward-looking entrepreneurship and shipping”.

One of the key objectives of the National Strategic Plan for Extraversion and economic diplomacy is to actively promote Greece's exports to world markets, and this has been effectively achieved.

At the same time, it should be considered that crucial drivers of Greece's economic growth and Greek foreign trade prospects could be domestic high-tech production, high-added-value goods, with diversified exports of goods and services. However, Greece is not taking full advantage of these drivers and, for the time being, continues to follow a commodity-dependent economy model. Countries with commodity-dependent economies face significant challenges stemming from commodity price shocks and insufficient revenues due to the low value added of exports. UNCTAD defines an economy as commodity-dependent when over 60 percent of merchandise export revenues come from primary commodities, such as food and agricultural raw materials, fuels, and minerals. Greece's exports of goods are heavily reliant on low-value-added products. The largest share of export goods is represented by food; mineral fuels, oils, distillation products; aluminium, and pharmaceutical products. And the Greek economy's high dependence on tourism and seasonality increases its vulnerability. According to the Summer Season Dependency Index (SSDI), Greece has one of the highest levels of dependence on the peak tourist season in the world (72.9%). For all these reasons, the Greek economy suffers from a systemic deficit in its overall external trade and current account.

Therefore, significant efforts are required within the domestic economy for high-tech exports growth, their strategic diversification and the increase in Greece's Economic Complexity Index (Greece's ECI was 0,52 in 2024).

Global megatrends, such as climate change, the Energy Transition, and the intensification of global competitive

pressures, further underscore the urgency to pursue strategic diversification of export production. The answer to these challenges can be the development of a National Industrial Strategy for Greece, which will address issues of sustainability and the green transition, the development of high-value-added sectors, high-tech export diversification and the acceleration of economic growth.

Shipping is a key industry in Greece; as a global leader, it can leverage the world agenda of the Energy Transition and Sustainable Development to benefit the Greek economy and elevate it to a new technological level. Energy Transition will cause fundamental changes in shipping and global trade. Energy is 4.8 billion tonnes of seaborne trade, and international sustainability and green transition requirements are driving huge demand for cleaner and greener fuels.

If a New Industrial Strategy is developed and implemented, the Greek shipping industry – which, according to UNCTAD data, was the global leader in terms of merchant fleet size in 2025 (16,4% of the world's merchant fleet) – will be able to transport the largest volume of cleaner fuels worldwide.

Through a whole system of multiplier effects, the shipping industry influences the entire economy and the development of other high-value-added sectors, education, IT and AI, science, research and innovation. In this way, the Greek shipping industry can become a driving force for strategic export diversification, accelerating the sustainability of Greece's economy and the world's sustainability.

In this paper we determine the *key points* for successful green transition and sustainability of Greece's economy.

1) Although the transition to a green economy is inherently systemic and must involve the entire economy, four key sectors are crucial:

- production of energy from clean and renewable sources (for instance, solar panels and wind turbines);
- improvement of energy efficiency (in buildings and transport especially);
- conservation and smart use of natural capital (sustainable agriculture, fishing, water, waste and other sectors);
- the Energy Transition across all industries to reduce carbon emissions; in this paper I consider possibilities for the realisation a great role of Energy Transition in Greek shipping for the sustainability of the national economy.

2) Greek shipping as a global leader in the merchant fleet can leverage the world agenda of the Energy Transition to benefit the Greek economy. Greek shipping can, through multiplier effects, elevate Greece's economy to a new technological level with low carbon emissions and sustainable development.

² National Strategic Plan for Extraversion 2025, Hellenic Republic Ministry of Foreign Affairs, General Secretary of International Economic Affairs
https://www.agora.mfa.gr/images/%CE%95%CE%A3%CE%A3%CE%95_2025_EN_Final.pdf

3) Transitioning to a low-carbon society will require a large amount of economic and financial resources to be invested in ‘green’ sectors. An increase in revenue from high-tech and high-added-value Greek exports and a reduction in the trade balance deficit could create a powerful own resource of Greece’s economy for financing green transition and sustainable development.

4) The Ministry of Foreign Affairs' economic diplomacy is effectively promoting Greek exports worldwide through great efforts and a network of institutions. At the same time, the domestic Greek economy suffers from long-standing structural imbalances, including a chronic trade deficit and a negative current account due to heavy reliance on low-value-added exports. The negative effects of a commodity-dependent economy are slowing down Greece’s development and preventing it from embarking on a path of accelerated economic growth and sustainability.

5) The development and implementation of a National Industrial Strategy, which includes policies for stimulating the green transition and sustainability in Greek shipping, the growth of industrial innovation clusters, high-tech production, and high-value-added export goods, could resolve the structural problems of the Greek economy and bring additional financial resources for green transition and sustainability.

6) Economic diplomacy of the Ministry of Foreign Affairs and implementation of the National Industrial Strategy will create a powerful synergy effect for the expansion of high-added-value Greek exports, acceleration of economic growth and an increase in wealth for the population.

This paper presents analysis of the prerequisites for implementing these ideas, model of the shipping industry impact on the national economy through multiplier effects

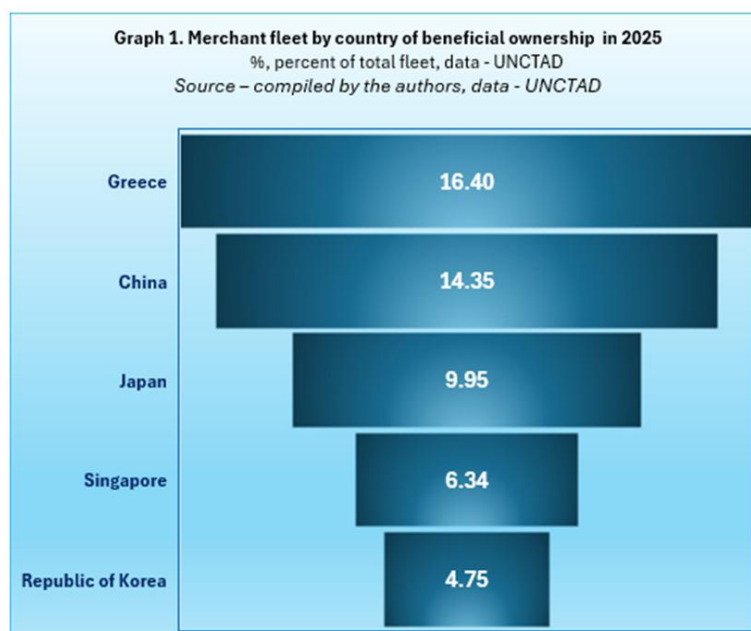
and provides a systematic description of international and European legal documents on sustainability and the green transition. The paper outlines the competitive environment for Greek shipping and the levers employed by its main competitors (China, Japan, South Korea). It also highlights the initiatives of the Greek government, business community and scientific organisations, summarises their discussions on the opportunities and challenges of the Greek shipping industry development and Energy Transition. In concluding we outline a system of policy recommendations for the Greek government.

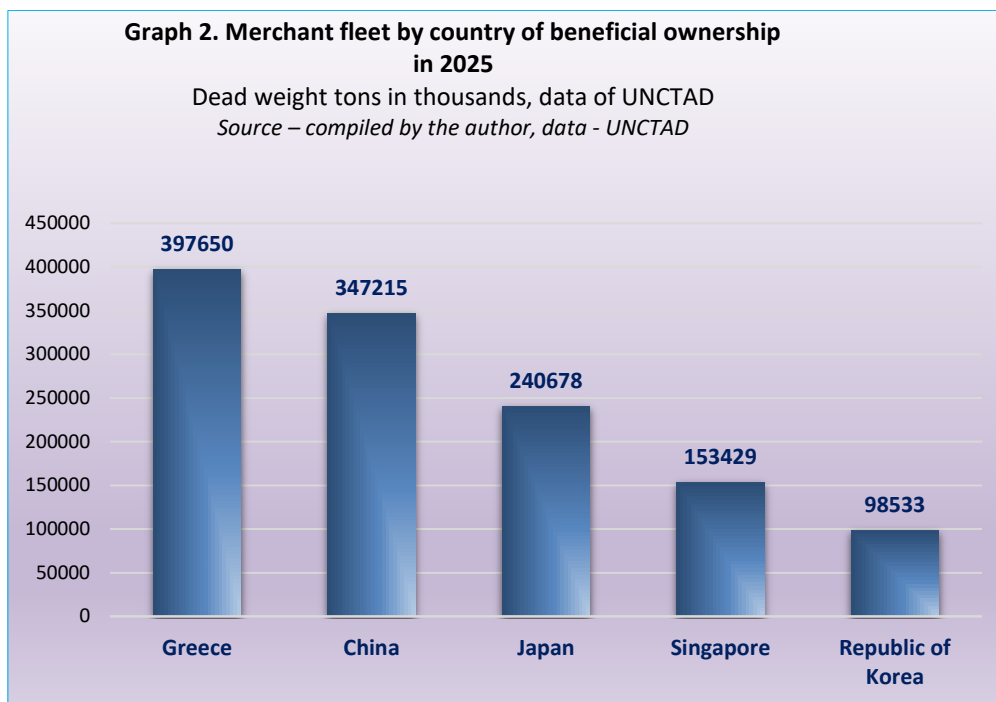
2. Related literature

There is a considerable body of literature devoted to analysing the leading role of Greek shipping in the global market. In accordance with UNCTAD Review of Maritime Transport. Staying the Course in Turbulent Waters (2025)³, Greece was a global leader in the TOP 5 countries in 2025 by DWT and percents of total fleet, followed by China, Japan, Singapore and the Republic of Korea (Graph 1, Graph 2).

Greece has a long historical tradition in shipping and holds a strong competitive position globally today in terms of its merchant fleet and expertise in the field of maritime transport. It is difficult to overestimate the distinctive role played by the shipping industry in the world trade, and therefore in Greece’s international prestige as a global brand, in Greek economic diplomacy and foreign policy. There are some unique secrets of the global success of the Greek shipping industry that revealed in several research papers.

³ UNCTAD Review of Maritime Transport. Staying the Course in Turbulent Waters (2025), United Nations, Geneva, 2025 https://unctad.org/system/files/official-document/rmt2025_en.pdf





Particularly, the authors of the paper Stefanidis, Abraham and Ioannidis, Anthony (2007)⁴, describe informal networking of families of entrepreneurs with long strong ties imbued in mutual trust and immersed in 'love for the sea' tradition that allow Greek shipping companies to address the peculiarities and specificity of a highly globalised industry. Close family ties, clustering, and tacit knowledge allow Greek shipping companies to enjoy efficiencies and synergies hard to replicate by the competition. These network ties create mutual trust and understanding that minimizes opportunistic behavior and agency costs. Clustering creates both scale and networking economies that provide Greek shipping companies an advantage over their peers.

In accordance with Veson Nautical data in January 2026, although China has a larger number of tankers, the value of the Greek tanker fleet is significantly higher (\$77 bln), exceeding China's by \$21 bln. Greece also has the world's second-largest fleet of bulk carriers, comprising 2,561 vessels, but ranks third in terms of value (\$56 bln), behind Japan (\$68 billion). Japan has the largest fleet in terms of both value and volume in the following sectors: LNG, LPG, refrigerated vessels and transport vessels.

Recently, due to geopolitical changes, the value of assets in the shipping industry has begun to rise, particularly for tankers used to transport liquefied petroleum gas (LPG). Around 19% of the LPG carrier fleet is owned by Japanese

operators, 7% by Chinese shipowners, Greek shipowners hold 6% of the fleet, Singapore 5% and Indonesia 5%.

The topic of our paper is also linked to a wealth of literature analysing the global competitive environment for the Greek shipping industry. By 2025, the shipbuilding industry had become a fiercely competitive arena, won by countries with strong government industrial policies and substantial investment. China, South Korea and Japan were the TOP 3 world leaders in shipbuilding. The Asia-Pacific region alone accounts for at least 85% of all shipbuilding activities, with China, South Korea, and Japan being the main contributors.

According to the paper by Zahra Ahmed (2025)⁵, the TOP 3 countries in shipbuilding can be characterised as follows:

1) *China*, through a strong industrial strategy and government's policy for large state-owned high-technological companies, has gained a leading position in shipbuilding and is striving for global leadership in shipping. The Chinese dominance in shipbuilding is due to the cheap workforce, government subsidies and support, aggressive industrial policies, investment in research and development and a swift expansion of shipyard capacity.

In 2016, China acquired a 67% stake in the Greek port of Piraeus. It identified the Port of Piraeus as a crucial geostrategic maritime hub for the expansion of Chinese exports. It called it the 'Head of the Dragon' of Belt and Road Initiative (BRI). The *Belt and Road Initiative (BRI)* is

⁴ Stefanidis, Abraham and Ioannidis, Anthony (2007)⁴, Entrepreneurial Networks in Highly Globalised Industries: The Case of the Greek Shipping Industry. International Journal of Networking and Virtual Organisations, Vol. 4, No. 2, pp. 189-200, 2007, Available at SSRN: <https://ssrn.com/abstract=1016802>

⁵ Zahra Ahmed (2025) Top 5 Countries Dominating Global Shipbuilding in 2025, Marine Insight, 17 July 2025 <https://www.marineinsight.com/top-5-countries-dominating-global-shipbuilding-in-2025/>

a Chinese initiative to build transcontinental transport, logistics corridors, and infrastructure linking China with Central Asia, Europe, Africa and the Middle East. It comprises two components: The Silk Road Economic Belt ('the Belt') – land-based transcontinental economic corridors, and the 21st Century Maritime Silk Road ('the Road') – 21st-century maritime trade and logistics routes linking Asia, Africa and the Mediterranean.

Since its launch in 2013 by President Xi Jinping, the BRI has become the flagship project of his presidency. With its historical roots in the ancient Silk Road, which linked China, Central Asia and Europe during the Han Dynasty (206 BC – 220 AD), the BRI is a global infrastructure project that combines land and sea networks. One of the core concepts of the BRI is the integration of infrastructure focused on rail, road transport, shipping, aviation, pipelines, as well as integrated space-based information networks. The BRI has not only trade and general economic objectives but also aims to increase China's geopolitical, geofinancial, cultural and other forms of global influence. China needs the Port of Piraeus as a seaport for exporting goods to Europe and their subsequent rail delivery to Budapest – the BRI's land-based logistics hub.

As the author of research paper Laia Comerma Calatayud (2023)⁶ noticed, the Chinese state-owned company COSCO is not only present in Europe at the Port of Piraeus. It has also established a network of ports in the northern Mediterranean, particularly in Spain. Although Spain is not a participant in the BRI, the Port of Valencia is already considered a point on the Silk Road, and the Port Authority of Valencia (PAV) has close ties with China, having participated in numerous summits on logistics and the BRI since 2017.

COSCO already owns 51% of the largest container terminal in the Mediterranean, the CSP Iberian Valencia Terminal, which it acquired from the leading Spanish port operator Noatum Ports. In Spain, COSCO is pursuing a strategy of network expansion: it has acquired stakes in two terminals – in Zaragoza and Madrid – and owns 40% of another maritime terminal in Bilbao. Furthermore, to improve connections between these four terminals and ensure a comprehensive system, COSCO has acquired a rail operator on the Iberian Peninsula. The company also holds a 40% stake in the Vado Ligure Reefer and Container terminals in Italy and a 26% stake in the Kumport terminal in Istanbul, Turkey.

Thus, China is pursuing a large-scale, long-term industrial policy and transcontinental strategy aimed not only at expansion of export, global leadership in shipping, shipbuilding and many other sectors, but also at significant influence on the global order.

2) *South Korea* is known for constructing high-value and technologically advanced ships. South Korean shipbuilders bagged orders for 10.98 million CGT in 2024, which is approximately 17% of the global market share. Its key players include HD Korea Shipbuilding & Offshore Engineering, Hanwha Ocean, and Samsung Heavy Industries, which are top names in the country when it comes to shipbuilding. South Korea leads in building advanced LNG or Liquefied Natural Gas Carriers, Very Large Crude Carriers or VLCCs and large container ships. They are also focusing on ammonia and LPG Carriers. South Korea is investing in new LNG ship technologies, AI-based ship intelligence systems, carbon capture and storage or CCS-ready designs.

3) *Japan* is shifting its focus towards high-value, specialised ships, such as eco-friendly bulk carriers and those with advanced technologies, rather than just competing on volume with China. It is exploring arenas like autonomous shipbuilding and other cutting-edge technologies to maintain a competitive edge. Japan's order book amounted to 8.38 million CGT in 2024, accounting for 13% of the global market. The country excels in designing and constructing LNG and LPG ships, reefers, and vehicle carriers. A major portion of its 2024 backlog consisted of bulk carriers.

According to the data⁷ of the platform Imarinenews.com, the Japan government has set a goal to double its shipbuilding capacity and increase its global market share in new orders to 20% by 2030. It includes plans to build a state-backed shipyard and the consolidation of private entities, like a potential merger between Imabari Shipbuilding and Japan Marine United (JMU). In 2025, the Japanese shipbuilding industry was focusing on providing quality and investing in technological advancements in eco-ships like LNG-fueled car carriers while boosting productivity.

This paper also presents a systematic review of the literature on the legislative aspects of the Green Transition in Greece and the role of the Greek shipping industry in driving the global Energy Transition.

The definition of green or environmentally sustainable projects may vary depending on the sector, location or applicable taxonomy systems. For instance, the European Union's Taxonomy Regulation⁸ (European Union, 2020)

⁶ Laia Comerma Calatayud (2023) The complex relationship between Europe and Chinese investment: The case of Piraeus – King's College London, Lau China Institute, China in Focus Working paper 2023 <https://www.kcl.ac.uk/lci/assets/china-in-focus-piraeus-paper-final.pdf>

⁷ I Marine news data <https://www.imarinenews.com/24161.html>

⁸ What the EU is doing to create an EU-wide classification system for sustainable activities https://finance.ec.europa.eu/sustainable-finance/tools-and-standards/eu-taxonomy-sustainable-activities_en

establishes specific criteria for determining whether an economic activity qualifies as environmentally sustainable.

A Commission Delegated Regulation (European Union, 2023c) supplements the Taxonomy Regulation by providing specific technical criteria for numerous industry sectors, including sea and coastal freight water transport, vessels for port operations and auxiliary activities, as well as the retrofitting of sea and coastal freight and passenger water transport. The European taxonomy framework has its own approach to sustainable activities in shipping but takes into consideration the short-term International Maritime Organization (IMO) measures to reduce greenhouse gas emissions. The IMO is accelerating environmental regulations to increase pressure on the shipping industry to reduce carbon emissions.

The International Maritime Organization (IMO) is a specialized agency of the United Nations regulating maritime transport. It was established following agreement at a UN conference held in Geneva in 1948, but this did not come into force for ten years, and the new body, then called the Inter-governmental Maritime Consultative Organization, first assembled on 6 January 1959. Headquartered in London, United Kingdom, the IMO has 176 Member States and three Associate Members as of 2025.

IMO is the source of approximately 60 legal instruments that guide the regulatory development of its member states to improve safety at sea, facilitate trade among seafaring states and protect the maritime environment. The most important IMO legal document in environmental convention is the International Convention for the Prevention of Pollution from Ships (MARPOL)⁹ with objective to minimize pollution of the oceans and seas, including dumping, oil and air pollution. MARPOL is divided into Annexes according to various categories of pollutants, each of which deals with the regulation of a particular group of ship emissions. As of 1 January 2020, new emission standards are enforced for fuel oil used by ships, in a regulation known as IMO 2020¹⁰. This regulation limits the sulphur in the fuel oil used on board ships operating outside designated emission control areas to 0.50% m/m (mass by mass) - a significant reduction from the previous limit of 3.5%. Within specific designated emission control areas the limits were already stricter (0.10%). This new limit was made compulsory following an amendment to Annex VI of the International Convention for the Prevention of Pollution from Ships (MARPOL).

⁹IMO explanation about MARPOL

[https://www.imo.org/en/about/conventions/pages/international-convention-for-the-prevention-of-pollution-from-ships-\(marpol\).aspx](https://www.imo.org/en/about/conventions/pages/international-convention-for-the-prevention-of-pollution-from-ships-(marpol).aspx)

¹⁰ IMO explanation about IMO 2020

<https://www.imo.org/en/mediacentre/hottopics/pages/sulphur-2020.aspx>

The recent IMO developments are focused to reduce greenhouse gas emissions from ships, notably, the agreement on draft midterm measures in line with the 2023 IMO strategy on greenhouse gas emissions. In accordance with UNCTAD (2025) Review on Maritime Transport, the revised 2023 IMO strategy on greenhouse gas emissions (IMO, 2023) reflects an enhanced common ambition to reach net-zero emissions from international shipping close to 2050; a commitment to increase the uptake of alternative zero and near-zero-emissions fuels by 2030; and indicative checkpoints for 2030 and 2040 (UNCTAD, 2023).

By the UNCTAD (2025) Review Maritime Transport, the key features of the Net Zero Framework Under the draft regulations (IMO, 2025c) are follow:

With few exceptions, ships of 5,000 gross tonnage and above will be required to comply with the technical and economic elements of the Net-Zero Framework:

- Global fuel standard: Ships must reduce, over time, their annual greenhouse gas fuel intensity (GFI) – that is, how much is emitted for each unit of energy used. This is calculated using a well-to-wake approach.
- Global economic measure: Ships emitting above GFI thresholds will have to acquire remedial units to balance deficit emissions, while those using zero- or near-zero emissions technologies will be eligible for financial rewards.

There will be two levels of compliance with fuel intensity targets: a base target and a direct compliance target at which ships would be eligible to earn “surplus units”.

Ships that emit above the set thresholds can balance their emissions deficit by:

- transferring surplus units from other ships;
- using surplus units they have already banked;
- using remedial units acquired through contributions to the Net-Zero Fund

The IMO Secretary-General will establish the Net-Zero Fund to collect contributions related to emissions. Revenues will then be disbursed to:

- reward low-emissions ships;
- support innovation, research, infrastructure and just transition initiatives in developing countries;
- fund training, technology transfer and capacity-building to support the IMO greenhouse gas emissions strategy;
- mitigate negative impacts on vulnerable States, such as small island developing States and the least developed countries.

According to the proposed amendments, “after the end of calendar year 2028 and after the end of each calendar year thereafter”, with few exceptions, all ships of 5,000 gross

tonnage and above 10 will be required to calculate their attained annual GFI for the preceding calendar year (reporting period), using ship fuel oil consumption data collected for transmission to the IMO database (draft regulation 27) and taking into account guidelines to be issued by the IMO.

The main EU system of legal and project documents that is important for Greece and the Greek shipping industry is the European Green Deal¹¹. As a part of the European Green Deal, the European Climate Law sets a legally binding target of net zero greenhouse gas (GHG) emissions by 2050: “The EU institutions and the Member States are bound to take the necessary measures at EU and national level to meet the target, considering the importance of promoting fairness and solidarity among Member States”.

The governance process for EU members states including Greece is regulated by the National Energy and Climate Plans (NECPs)¹². It defines 5 areas for each EU member state: decarbonisation; energy efficiency; energy security; internal energy market; research, innovation and competitiveness.

For Greece, the final updated NECP submitted in May 2025: Commission Assessment of the Final Updated National Energy and Climate Plan of Greece¹³. Greece’s explanation¹⁴ of NECP considers “the transport sector is the largest source of GHG emissions among ESR sectors in Greece and the only one where GHG emissions have increased compared to 1990. The final NECP sets more ambitious targets for reducing CO₂ emissions from different categories of vehicles (e.g. 30% of new vehicles will be electric by 2030), expected to bring a 10% decrease of road transport emissions between 2022 and 2030. However, an increase in emissions from the maritime sector is expected”.

The Fuel EU Maritime Regulation¹⁵ is a complementary regulation to the EU ETS, ensuring that the greenhouse gas intensity of fuels used by the shipping sector will gradually decrease over time. It contributes to the EU-wide target of reducing net emissions by at least 55% by 2030, and to achieving climate neutrality in 2050.

The Regulation aims to reduce greenhouse gas emissions from the shipping sector, by promoting the use of cleaner fuels and energy, promoting the decarbonisation of the

maritime transport sector by setting maximum limits on the yearly greenhouse gas intensity of the energy used by a ship.

The limits will become more ambitious over time, from a decrease of 2% in 2025 to as much as 80% by 2050, to stimulate and reflect the expected developments in technology and the increased production of renewable and low-carbon fuels.

The targets cover not only carbon dioxide (CO₂) emissions, but also methane (CH₄) and nitrous oxide (N₂O) emissions over the full lifecycle of the fuels, considering the Well to Wake principle.

The new rules also introduce an additional zero-emission requirement at berth, mandating the use of onshore power supply (OPS) or alternative zero-emission technologies in ports by passenger ships and containerships, with a view to mitigating air pollution emissions in ports, which are often close to densely populated areas.

Fuel EU Maritime takes a goal-based and technology-neutral approach, allowing for innovation and the development of new fuel technologies to meet future needs, and offering operators the freedom to decide which to use based on ship-specific or operation-specific profiles.

The Regulation also provides for a voluntary pooling mechanism. Under this scheme, ships are allowed to pool their compliance balance with one or more other ships. Thus, it will be the pool as a whole that has to meet the greenhouse gas intensity limits on average.

In accordance with this Regulation, and explanation of Clarksons Research¹⁶, in the shipping industry *there are three most important indicators* for detecting the level of sustainability and green transition:

- *Energy Efficiency Design Index (EEDI)*. It is a technical policy measure for ships contracted after 1st January 2013, setting efficiency thresholds that become increasingly stringent over time. From 2025, all newbuilds above a certain size (segment dependent) need to meet a 30% reduction from its baseline emissions.
- *Energy Efficiency Existing Ship Index (EEXI)*. For existing ships not covered under the EEDI, a one-time certificate for energy efficiency corresponding to the threshold of EEDI phase 2/3 must be obtained before 1st January 2023. Depending on segment, EEXI requires technical efficiency of a ship to improve by 20% to 50%.
- *Carbon Intensity Indicator (CII)*. The CII framework regulates the operational carbon intensity of a vessel. The ship will be given an annual rating from A to E

¹¹ European Green Deal https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/european-green-deal_en

¹² https://commission.europa.eu/energy-climate-change-environment/implementation-eu-countries/energy-and-climate-governance-and-reporting/national-energy-and-climate-plans_en

¹³ https://commission.europa.eu/publications/commission-assessment-final-updated-national-energy-and-climate-plan-greece_en

¹⁴ [86ba67f3-7d6d-44dc-8d40-2394d6520e10_en](https://commission.europa.eu/publications/commission-assessment-final-updated-national-energy-and-climate-plan-greece_en)

¹⁵ Regulation - 2023/1805 - EN - EUR-Lex

¹⁶ Clarksons Research <https://www.clarksons.net/n/#/portal>

depending on its emissions efficiency over the previous calendar year, with thresholds becoming increasingly strict. Starting in 2023, CII is applicable to all vessels above 5,000GT. CII will determine the maximum steaming speed for large parts of the global fleet.

Overall, the international and European regulations on green transition and sustainability provide significant incentives for all countries to use cleaner and greener fuels. This creates tremendous global demand for these types of fuel and, consequently, for their maritime transportation worldwide.

From our view, Greece, as a global leader by the size of its merchant fleet and colossal historical experience and expertise in the field of maritime transport, can use this opportunity as a powerful lever to decarbonise shipping industry, develop Greek economy at a new quality level, and enhance its geopolitical impact by driving global sustainability through shipping cleaner fuels worldwide. In the next paragraphs of the paper, we present the results of our research and policy recommendations.

3. Methodology and data

The research presented in this paper, is based on statistical analysis and complex economic systems methodology, big data analysis, logical foundations of economic growth, sustainability and energy transition.

We used statistical data of ELSTAT, EUROSTAT, UNCTAD, IMF, World Bank Open Data, data of Hellenic Republic Ministry of Economy and Finance, Bank of Greece, Growth Lab Harvard Kennedy School Database on economic complexity, IMD World Competitiveness Ranking Database, World Innovations Index data and others.

4. Results

4.1. A world leadership of Greece in shipping is a driving force for growth of national economy and the global Energy Transition

Greece plays a pivotal role in global maritime transport, serving as a driving force for global trade. Therefore, the green transition in the Greek shipping industry and the Greek fleet's transportation of cleaner fuels worldwide can accelerate the economy of Greece and contribute to global sustainability.

The market for green energy assets is highly concentrated, and demand for them is growing. Therefore, Greece could use its competitive advantages, human capital and know-how to develop high-tech shipbuilding industries with new technological approach considering sustainable and green transition requirements.

The global shipbuilding market size was valued at USD 166.20 bln in 2025 and is projected to grow from USD 175.71 bln in 2026 to USD 274.19 bln by 2034, exhibiting a CAGR (Compound Annual Growth Rate)¹⁷ of 5.72% during the forecast period. The industry growth is driven by international trade expansion, fleet decarbonization, and technological advancements in maritime transport.

Against a backdrop of tough global competition, geopolitical tensions and international legislation requiring stricter sustainability standards and a green transition, Greece can leverage its strong position as a global leader in maritime transport to drive its economic growth and resilience. This requires a joint effort involving the government's industrial policy, the Ministry of Foreign Affairs' economic diplomacy, a consolidated position by business communities, scientific organisations and international partners.

In the face of fierce global competition and the aggressive industrial policies of major countries — particularly China — aimed at capturing markets and widening export growth, Greece must work intensively not only to maintain its global leadership in shipping in a new era of sustainability and green transition but also to accelerate other high-tech industries in the Greek economy, particularly shipbuilding with cleaner and greener fuels.

As the Greece's maritime sector is a global leading industry in terms of technology and innovation, as well as in terms of capital, this industry can positively impact the entire Greek economy through multipliers, which, under an efficient National Industrial Strategy and sustainability and green transition policy can accelerate Greece's economic growth and competitiveness.

We elaborated a model of these interconnected multipliers, government policies, development of economy and financial flows at the Graph. 3. The shipping industry can become a driving force in strengthening Greece's competitiveness, accelerating economic growth and increasing the living standards of population.

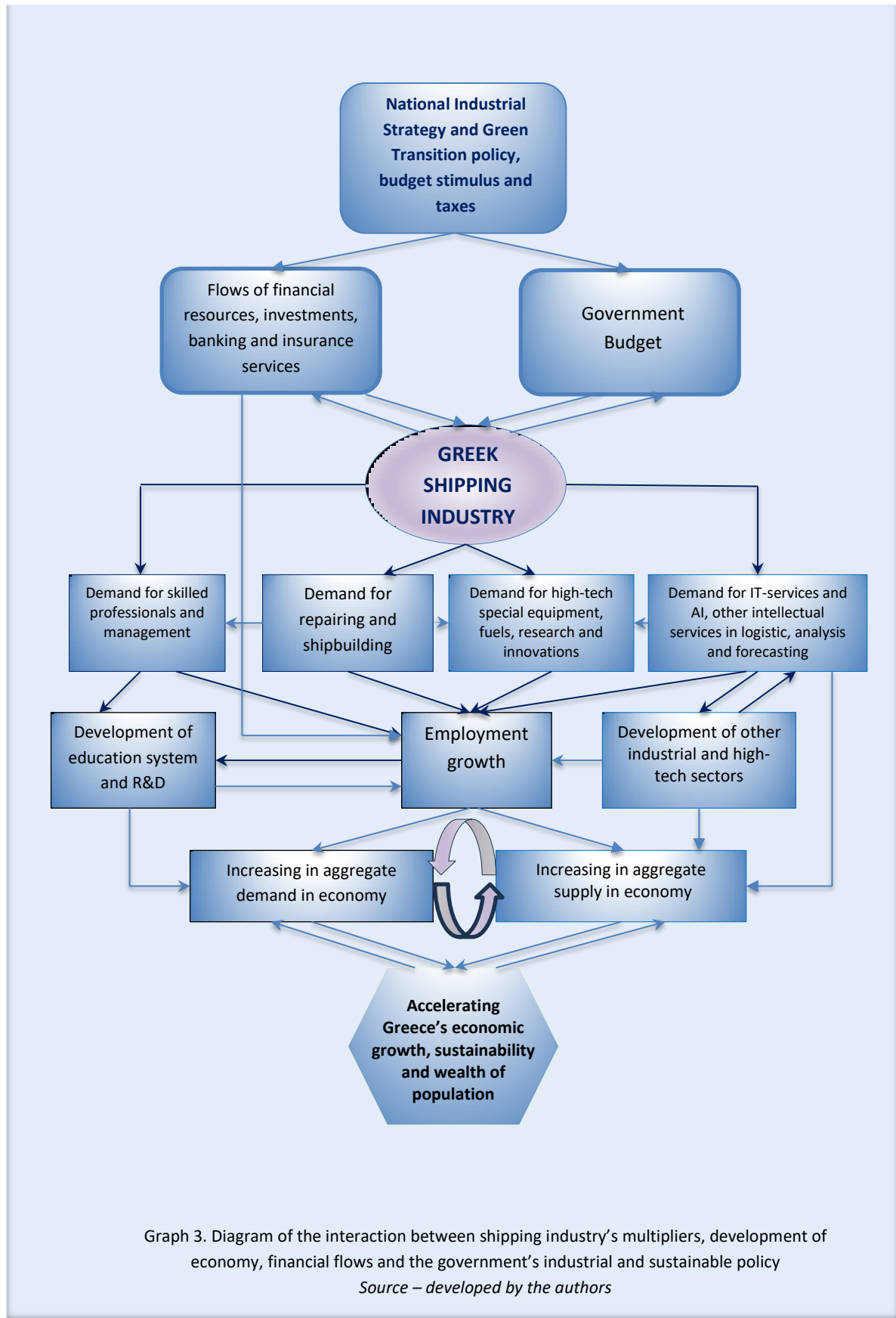
The National Industrial Strategy and sustainability and green transition policy as its part, must be designed to ensure that these multipliers of Greek shipping industry and financial flows operate within the national economy of Greece, rather than flowing out exclusively to benefit other countries.

4.2. The need for a National Industrial Strategy for Greece, taking in consideration the Greek shipping global leadership

¹⁷ CAGR - Compound Annual Growth Rate, is a widely used financial metric that measures an investment's annual growth rate over a specific period. It represents an investment's mean annual growth rate over a specified period, typically longer than one year. It provides a more accurate representation of the investment's performance by smoothing out the volatility and fluctuations that can occur with simple annual growth calculations.

The need for a National Industrial Strategy for Greece that embraces Greek shipping decarbonisation, accelerating Greece's economic growth and driving global sustainability. It should be considered that crucial drivers of Greece's

economic growth and Greek foreign trade prospects could be domestic high-tech production with high-added-value goods with diversified exports of goods and services.



However, Greece is not taking full advantage of these drivers and, for the time being, continues to follow a model of commodity-dependent economy. Countries with commodity-dependent economy face significant challenges UNCTAD defines an economy as commodity-dependent when over 60 percent of merchandise export revenues come from primary commodities, such food and agricultural raw materials, fuels, and minerals¹⁸. Greece's exports of goods are heavily reliant on low-value-added products. The largest share of export goods is represented by food; mineral fuels, oils, distillation products; aluminum; pharmaceutical products.

Considering export of services, the Greek economy's strong dependence on tourism and seasonality increases its vulnerability. According to the Summer Season Dependency Index (SSDI), Greece has one of the highest levels of dependence on the peak tourist season in the world (72.9%). For all these reasons, the Greek economy suffers from a systemic deficit in its overall external trade and current account.

By all these reasons Greece suffers from several long-term structural imbalances in the Greek economy, which impede its smooth green transition and sustainable development. They result in long-standing systemic deficit of current account (-11,3 bln euros in 2025) with negative trade balance of Greece (-33 billion euros in 2025). Exports of services has a positive role in trade balance; however, it is not enough to solve the problems of current account deficit and insufficient financial resources for sustainable development (Graph 4, 5).

Despite its positive trend, Greece's real GDP growth remains insufficient to address the country's key problems. Real GDP remains almost a third below its pre-crisis level of 2008 (Graph 6).

Labour productivity stays low due to the economy's structural shift towards sectors with low value added (Graph 7).

Therefore, significant efforts are required within the domestic economy for the growth of high-tech exports, their strategic diversification and an increase in the Economic Complexity Index of Greece (Greece's ECI was 0,52 in 2024).

Global megatrends as the impact of climate change, the Energy Transition agendas, and the intensification of global competitive pressures further underscore the urgency to pursue strategic diversification of export production.

The answer to these challenges can be the development of a National Industrial Strategy for Greece, which will address issues of sustainability and the green transition, the development of high value-added sectors, high-tech export diversification and the acceleration of economic growth.

Shipping is a key industry in Greece; as a global leader, it can leverage the world agenda of the Energy Transition and Sustainable Development to benefit the Greek economy and elevate it to a new technological level. Energy Transition will cause fundamental change to shipping and global trade. Energy is 4.8 bln tonnes of seaborne trade, and international sustainability and green transition requirements are driving huge demand for cleaner and greener fuels.

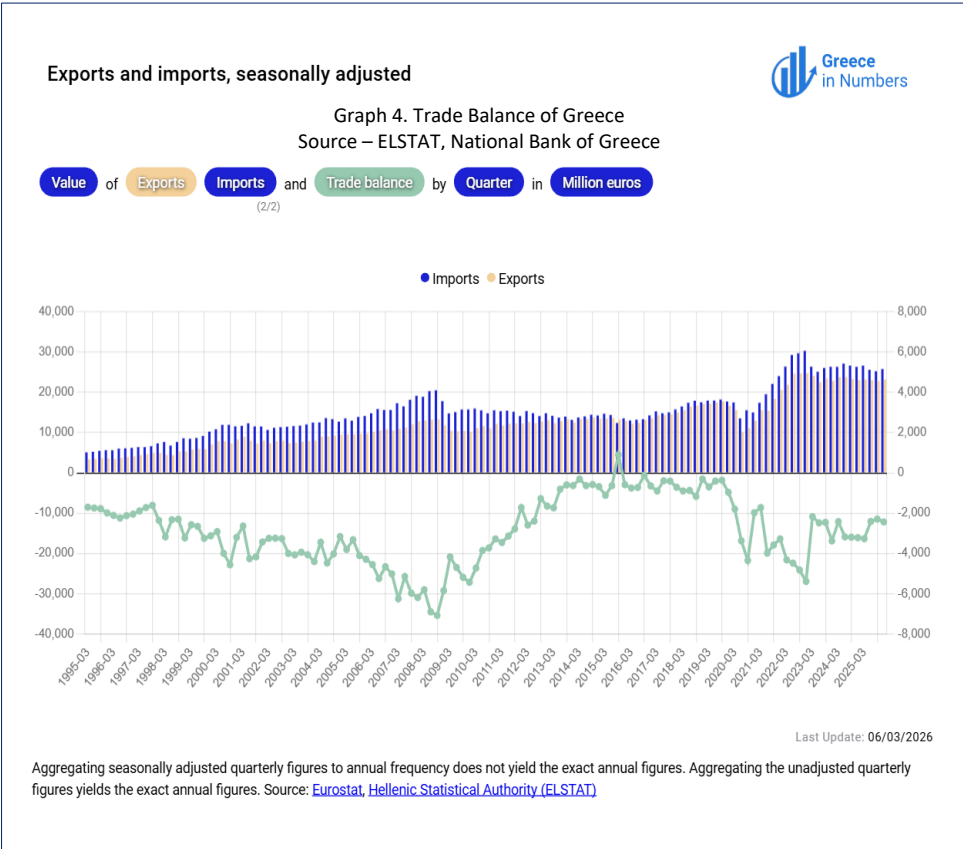
If a New Industrial Strategy is developed and implemented, the Greek shipping industry – which, according to UNCTAD data, was the global leader in terms of merchant fleet size in 2025 (16,4% of the world merchant fleet) – will be able to transport the largest volume of cleaner fuels worldwide.

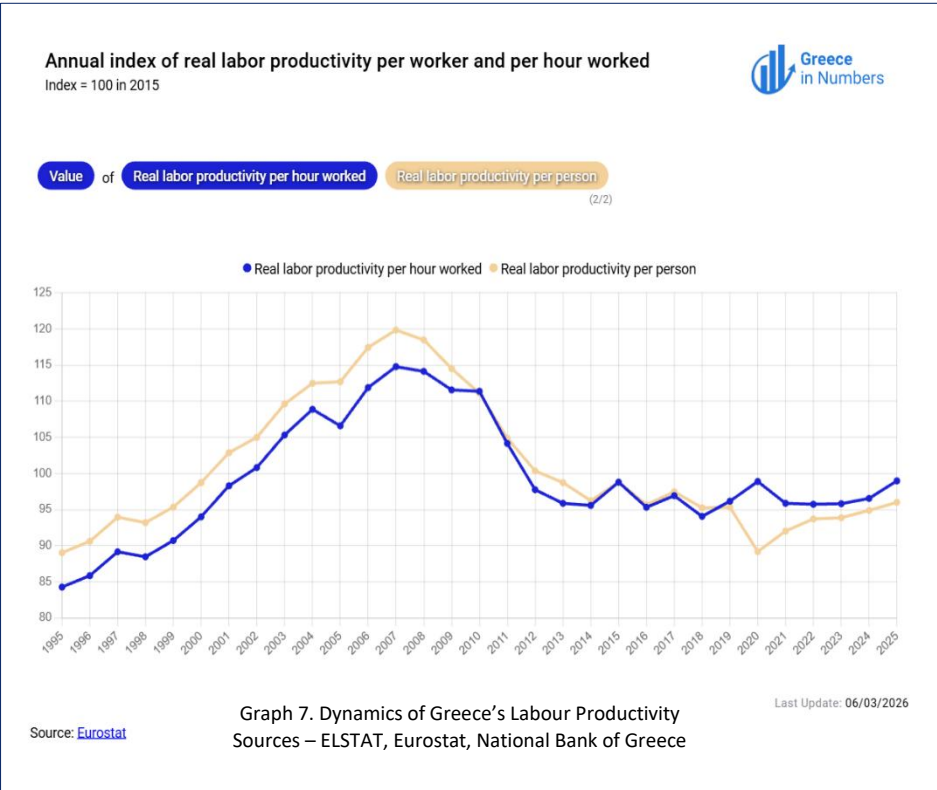
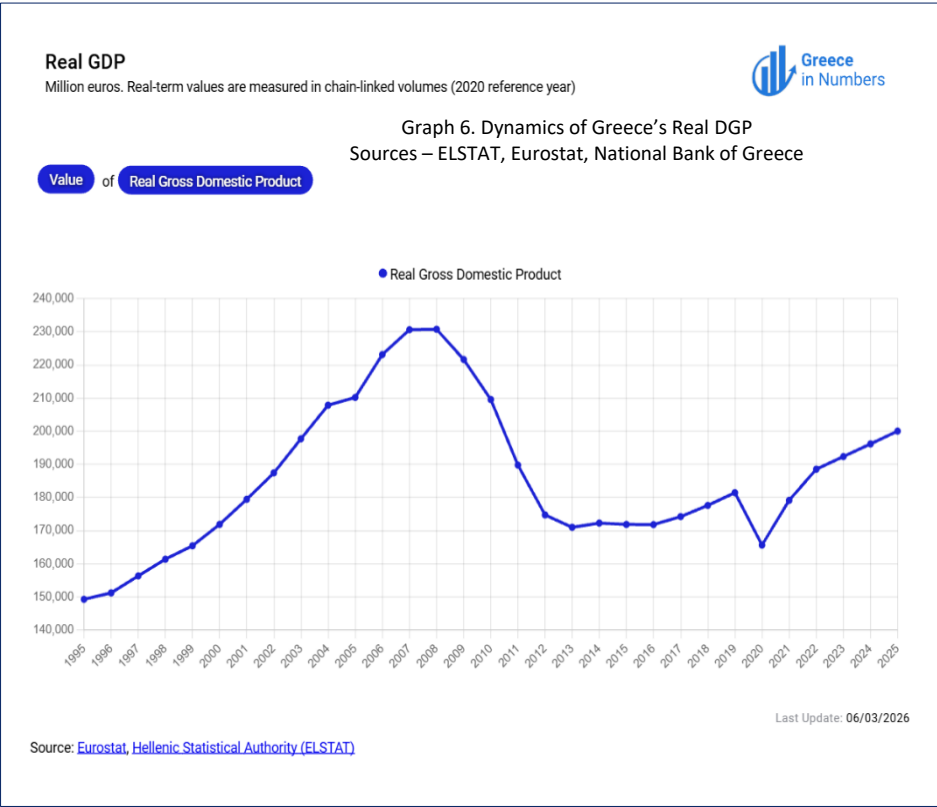
Through a whole system of multiplier effects, the shipping industry influences the entire economy and the development of other high value-added sectors, and thus the fields of education, IT and AI, science, research and innovations. In this way, the Greek shipping industry can become a driving force for accelerating and sustainably growing Greece's economy, for strategic export diversification, and a significant contributor to increasing sustainability worldwide.

Form our view, there are several country's levers that can contribute to the decarbonisation of Greek shipping and acceleration Greece's economic growth:

- Government's new National Industrial Strategy and economic diplomacy of the Ministry of Foreign Affairs;
- Industry-led, business community-led, and scientific community-led initiatives;
- Combining efforts of all sides and stakeholders of sustainability and green transition together with EU and international institutions.

¹⁸ “Dominguez S, Frontera C, and Freire C (2026). Strategic diversification: Empirical insights for leveraging economic complexity to break free from commodity dependence. UNCTAD working paper #13, March 2026





Greece's government National Industrial Strategy for an innovative industrialisation and decarbonisation should play a fundamental role in ensuring sustainability and the green transition in shipping and in accelerating the country's economic growth.

Well-known specialists in industrial policy, the authors of the paper Juhász R, Lane N, Rodrik D. (2023)¹⁹ explain the term of industrial policy: "Industrial policy is much discussed but rarely explicitly defined. We define industrial policies as those government policies that explicitly target the transformation of the structure of economic activity in pursuit of some public goal. The goal is typically to stimulate innovation, productivity, and economic growth. But it could also be to promote climate transition, good jobs, lagging regions, exports, or import substitution. Since industrial policy targets structural change, a key characteristic is the exercise of choice and discretion by the public authority: "we promote X but not Y," though the later part of this statement is typically left implicit".

A professor at Harvard University Dani Rodrick highlights an important economic rationale for industrial policy. It is based on the internalisation of externalities: capturing learning and innovation externalities, offsetting externalities having to do with the disappearance of local jobs, the externalities of the green transition — environmental or carbon externalities. A lot of industrial policies are interventions to provide companies with customised services, such as in workforce training, infrastructure or land that all are public goods. So whether it's fixing externalities or providing public goods, the economic rationale for industrial policy is very strong.

The Chinese government has been successfully implementing a powerful industrial strategy for a very long time. As a result, China has successfully become a leading global manufacturer for many of the key components of the future decarbonised economy, including renewable energy technology, batteries, and electric vehicles. China has become a strong competitor to Greece in the shipping industry, has developed worldwide maritime transport infrastructure, has taken the lead in the global shipbuilding sector, and may in future become a dominant player influencing the global economic order (see paragraph 2).

The only way for Greece to succeed in the competition for global leadership in sustainable shipping and to accelerate economic growth is to develop and implement an effective National Industrial Strategy, based on a flexible, innovative approach and the consolidation of the Greek business community, research organisations and international

partners. The Ministry of Foreign Affairs' economic diplomacy has a significant role in achieving these objectives.

One of the achievements on this way is that Greece has officially joined the *Clean Energy Marine Hubs (CEMH)*²⁰ project, a global initiative focused on promoting the development of clean energy infrastructure and fostering green shipping practices. This marks a significant step for Greece, a key player in the global shipping industry, as it ramps up efforts to decarbonize its maritime sector and shift toward sustainable fuel use. CEMH is a partnership between the private sector and governments across the energy-maritime value chain. Led by the International Chamber of Shipping (ICS), the International Association of Ports & Harbors (IAPH) and the Clean Energy Ministerial (CEM), the participating member governments include Brazil, China, Canada, Greece, Malta, Norway, Panama, Uruguay, and the UAE. The International Renewable Energy Agency (IRENA), and the Global Centre for Maritime Decarbonisation (GCMD) support the initiative together with ABS, Lloyds Register, OCIMF, and the World Economic Forum. All collaborating to unlock the production, transportation and use of low-carbon fuels for the world at scale. For Greece, participation in the Clean Energy Marine Hubs project offers numerous advantages:

- Greece can position itself as a leader in maritime sustainability,
- attraction international investment,
- assurance its long-term competitiveness in the shipping industry.

As the maritime industry undergoes a fundamental transformation, Greece's early involvement in such initiatives will likely provide a competitive edge as stricter environmental regulations come into force.

From our view, the role of Greek business and scientific communities in these processes is very important. Particularly, a significant role of the Union of Greek Shipowners (UGS) could be based on their strong global position. As UGS official site²¹ noticed, since 1916, the Union of Greek Shipowners represents Greek-owned commercial vessels over 3,000 GT under the Greek and other flags. Despite current challenges, Greek shipping represents more than 61% of the EU-controlled fleet and around 20% of the world deadweight capacity. The bulk/tramp sector carries staples, such as food, raw materials and energy products and is itinerant in nature. This implies that the Greek-controlled fleet has a high degree of flexibility and responsiveness to changing market conditions.

¹⁹ Juhász R, Lane N, Rodrik D. 2023. The New Economics of Industrial Policy. *Annu. Rev. Econ.* 16: Submitted. DOI: <https://doi.org/10.1146/annurev-economics-081023-024638>
https://drodrik.scholars.harvard.edu/sites/g/files/omnuum7106/files/dani-rodrik/files/the_new_economics_of_ip_081423.pdf

²⁰ [Clean Energy Marine Hubs | Clean Energy Ministerial](#)

²¹ Union of Greek Shipowners official site <https://ugs.gr/en/>

The UGS has traditionally supported and fostered policies ensuring a truly competitive business environment, free trade, global rules and regulations and first and foremost safety of life at sea and a sustainable environment. With headquarters in Piraeus and permanent representatives in Brussels and Washington D.C., the UGS closely follows developments in the IMO, OECD, ICC and other bodies. The UGS is a member of the International Chamber of Shipping (ICS) and the European Community Shipowners' Association (ECSA). UGS participates in the European Economic and Social Committee (EESC) and the Economic and Social Council of Greece (ESC).

As far as shipping sustainability and green transition, UGS noticed that Greek shipowners have been at the forefront of these developments, with a constantly increasing orderbook, currently at 56.2 million dwt, compared to 14.4 million dwt in 2021. During the last 5 years, the number of vessels on order from Greek shipowners has increased by more than 5 times²². The Greek-owned fleet is also the largest alternative fuel capable fleet in the world. Therefore, the Unit of Greek Shipowners could be one of the driving forces for realisation of New Industrial Strategy for Greek shipping decarbonisation, accelerating Greece's economic growth and contributing global sustainability.

In 2024 it was a successful conference titled "*Net-Zero and Climate-Resilient Shipping: Can Greece Lead the Race?*" within the framework of the Posidonia Exhibition in Greece. Its primary goal was to unite Greek business and scientific communities, government bodies and international organisations to discuss the future of the maritime industry, specifically emphasizing sustainability and climate resilience. Organized under the auspices of the Ministry of Maritime Affairs and Insular Policy of Greece, in collaboration with the Goulandris Natural History Museum, the UN Sustainable Development Solutions Network Global Climate Hub and the Alliance of Excellence for Research and Innovation on Aeiphoria (AE4RIA) the event brought together a diverse array of stakeholders ranging from industry leaders to policymakers, researchers, and representatives from various organizations²³. Discussions centered around identifying challenges and opportunities for achieving net-zero emissions in shipping operations, examining strategies to bolster climate resilience within the maritime sector, assessing Greece's potential to spearhead sustainable shipping practices on a global scale, possibilities of Greece's leadership in sustainable shipping and technological innovation.

In 2025 the results of the study "Shortsea Shipping in Domestic Transport: Trends, Challenges and Impact on the Greek Economy"^{24,25}, prepared by the Foundation for Economic and Industrial Research (IOBE), were presented to representatives of the maritime community by the Hellenic Shortsea Shipowners Association (EENMA)²⁶. Greece ranks 8th among the EU27, with 6.7% of the total cargo volume of European shortsea shipping handled by the domestic sector and has strategic importance for both the Greek and the European market. However, the study highlighted significant challenges for the sector's future. By this study, the push for green maritime policy for shortsea shipping in Greece is complicated by several interconnected challenges²⁷:

- *Sticker shock and compliance costs*: Meeting the environmental requirements of the EU Emissions Trading System (ETS) and the FuelEU Maritime initiative is incredibly expensive. Compliance costs for domestic shortsea shipping alone could reach millions annually, risking significant revenue losses for smaller operators.
- *Aging fleet and fragmented market*: The Greek-owned fleet features a high average age and old technology. Fleet renewal requires massive capital investments, which is difficult because the market remains highly fragmented with many smaller, independent owners.
- *Inadequate port Infrastructure*: Greek ports (including crucial hubs like Piraeus) struggle with implementing the necessary infrastructure to support zero-emission vessels and provide alternative marine fuels. This slows down the operational viability of green shipping.
- *Workforce shortages*: Transitioning to smart and autonomous green ships requires highly specialized skills. Greece faces a shortage of adequately trained seafarers and marine officers to handle modern onboard technology, necessitating rapid upgrades to university and vocational curricula.
- *Loss of Greek registry*: Due to limited local crew supplies, the Greek registry has lost a portion of its capacity as operators register larger, modern vessels under flags of convenience.

²⁴ [Shortsea Shipping in Domestic Transport: Trends, Challenges and Impact on the Greek Economy - EENMA](#)

²⁵ https://iobe.gr/wp-content/uploads/2025/09/RES_05_F_18092025_REP_GR.pdf

²⁶ Hellenic Shortsea Shipowners Association
<https://www.shortsea.gr/en/home/>

²⁷ Foundation for Economic and Industrial Research (IOBE) (2025) Analytical Report "Shortsea Shipping in Domestic Transport: Trends, Challenges and Impact on the Greek Economy"
<https://www.shortsea.gr/en/2025/09/19/shortsea-shipping-in-domestic-transport-trends-challenges-and-impact-on-the-greek-economy/>

²² UGS calculations, based on data from S&P Global Market Intelligence, February 2025 & UGS Annual Reports, 2021-2024

²³ <https://ae4ria.org/net-zero-and-climate-resilient-shipping-can-greece-lead-the-race-conference-may-31st-2024/>

As a result, the study estimated that without additional policy interventions, the annual compliance cost with the new measures could reach €225 million by 2030, potentially leading to freight rate increases of up to 38.6% and revenue losses of approximately €140 million.

The business community that united around the EENMA, including IOBE, proposes a set of policy measures centred on fleet renewal and modernisation, with emphasis on the adoption of low- or zero-emission technologies. At the same time, investments are required in critical port infrastructure, including shore-side electricity supply (cold ironing); alternative fuel bunkering infrastructure; intermodal terminals that enhance connectivity between shortsea shipping, rail, and road networks.

They also highlighted the necessity of dedicated financial instruments, drawing, among others, on revenues from the EU Emissions Trading System (ETS) and European funding programmes to support the sector's green transition.

Thus, in Greece, both the government and the collaborative efforts of business associations, scientific organisations and international institutions are working to implement various initiatives in the fields of sustainability and the decarbonisation of shipping. The development of a comprehensive National Industrial Strategy through joint efforts will serve as a powerful tool for systematic, consistent actions by various organisations and businesses, enabling Greece to achieve successful global leadership in the green transition of shipping, accelerate the growth of the national economy and contribute to global sustainability.

In the next paragraph we conclude the paper and suggest a system of Policy Recommendations.

5. Conclusion and Policy Recommendations

A strategic approach to addressing the challenges of the Greek economy's transition to Net-Zero Emissions must encompass a wide range of economic development issues and measures to elevate its financial capacity through achieving strategic aims:

- *addressing the Greek economy's structural imbalances and shifting it to a surplus trade and current account balance*; this will accelerate economic growth with low carbon emission, create a powerful own source of financial resources for all development programmes, including the green transition and sustainable development;
- *the development and implementation of a National Industrial Strategy* to accelerate innovative growth and introduce a high-tech and export-led growth economic model with low carbon emissions;
- *implementation of the National Industrial Strategy in synergy with the Ministry of Foreign Affairs' economic*

diplomacy to stimulate key growth drivers, such as the role of the shipping industry in Energy Transition and its multiplier effects for the national economy to turn-on the regime of high-tech export-led economic growth with low carbon emissions.

To achieve these strategic objectives, we recommend the following *policy measures*:

- Organising a productive meeting between the government and key associations and representatives of the Greek shipping industry to discuss *all necessary incentive measures aimed at realising the sector's full potential, its participation in the global Energy Transition through maritime transportation of cleaner and greener fuels worldwide, and the multiplier effects for the national economy in the development of its high-value-added sectors* (see Graph 1);
- Establishing ongoing productive work in this area, *developing a map of Greek shipping multipliers and monitoring their practical multiplier effects for the national economy*;
- Establish a Working Group under the leadership of the Ministry of Foreign Affairs to investigate potential markets for Greek potential high-tech and high-added-value export goods with low carbon emission and prepare a Strategic Analytical Report "Potential markets for Greek High-Tech and High-Added-Value export goods" covering these market sizes, the legislative and tariff frameworks in the corresponding countries, key competitors, the potential of Greek high-tech and high-added-value production with low carbon emission, and channels for entering these markets;
- *Developing a National Industrial Strategy for Greece based on the world best practice with accounting national and historical advantages of Greece*, on the mentioned above Strategic Analytical Report and on the methodology of the famous Harvard Kennedy School Growth Lab of Harvard University with a view to increasing the Greece's Economic Complexity Index and significantly boosting the share of high-tech and high-added-value export goods with low carbon emission in Greek economy; it is advisable to involve leading experts in high-tech industrial development in the drafting of this National Industrial Strategy, including specialists from the shipping, shipbuilding and defence sectors, experts in Energy Transition as well as the IT and AI sectors, research organisations and other high-tech fields;
- *Developing a Plan of implementation of the National Industrial Strategy for Greece*, considering the current state of Greece's economy, international and EU

Programmes and legislation in sustainability and green transition.

References

1. Alliance of Excellence for Research and Innovation on Aeiphoria (AE4RIA) <https://ae4ria.org/net-zero-and-climate-resilient-shipping-can-greece-lead-the-race-conference-may-31st-2024/>
2. Clarkson Research <https://www.clarksons.net/n/#/portal/about-us>
3. Clarksons Research <https://www.clarksons.net/n/#/portal>
4. Clean Energy Marine Hubs [Clean Energy Marine Hubs | Clean Energy Ministerial](#)
5. Commission Assessment of the Final Updated National Energy and Climate Plan of Greece (2025) https://commission.europa.eu/publications/commission-assessment-final-updated-national-energy-and-climate-plan-greece_en
6. The Conference “Net-Zero and Climate-Resilient Shipping: Can Greece Lead the Race?” May 31, (2024), within the framework of the Posidonia Exhibition in Greece
7. Dominguez S, Frontera C, and Freire C (2026). Strategic diversification: Empirical insights for leveraging economic complexity to break free from commodity dependence. UNCTAD working paper #13, March 2026
8. European Commission Regulation [86ba67f3-7d6d-44dc-8d40-2394d6520e10_en](#)
9. European Commission Regulation [Regulation - 2023/1805 - EN - EUR-Lex](#)
10. European Commission https://commission.europa.eu/energy-climate-change-environment/implementation-eu-countries/energy-and-climate-governance-and-reporting/national-energy-and-climate-plans_en
11. European Commission https://commission.europa.eu/publications/commission-assessment-final-updated-national-energy-and-climate-plan-greece_en
12. European Green Deal https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/european-green-deal_en
13. Foundation for Economic and Industrial Research (IOBE) (2025) Analytical Report “Shortsea Shipping in Domestic Transport: Trends, Challenges and Impact on the Greek Economy” <https://www.shortsea.gr/en/2025/09/19/shortsea-shipping-in-domestic-transport-trends-challenges-and-impact-on-the-greek-economy/>
14. Hellenic Shortsea Shipowners Association (EENMA) [Shortsea Shipping in Domestic Transport: Trends, Challenges and Impact on the Greek Economy - EENMA](#)
15. IMarine news data <https://www.imarinenews.com/24161.html>
16. IMO explanation about MARPOL [https://www.imo.org/en/about/conventions/pages/international-convention-for-the-prevention-of-pollution-from-ships-\(marpol\).aspx](https://www.imo.org/en/about/conventions/pages/international-convention-for-the-prevention-of-pollution-from-ships-(marpol).aspx)
17. IMO explanation about IMO 2020 <https://www.imo.org/en/mediacentre/hottopics/pages/sulphur-2020.aspx>
18. Juhász R, Lane N, Rodrik D. (2023). The New Economics of Industrial Policy. Annu. Rev. Econ. 16: Submitted. DOI: <https://doi.org/10.1146/annurev-economics-081023-024638>
https://drodrik.scholars.harvard.edu/sites/g/files/omnuum7106/files/dani-rodrik/files/the_new_economics_of_ip_081423.pdf
19. Laia Comerma Calatayud (2023) The complex relationship between Europe and Chinese investment: The case of Piraeus – King’s College London, Lau China Institute, China in Focus Working paper 2023 <https://www.kcl.ac.uk/lci/assets/china-in-focus-piraeus-paper-final.pdf>
20. National energy and climate plans. EU countries’ 10-year national energy and climate plans for 2021-2030. https://energy.ec.europa.eu/strategy/energy-union/national-energy-and-climate-plans_en
21. National Strategic Plan for Extroversion 2025, Hellenic Republic Ministry of Foreign Affairs, General Secretary of International Economic Affairs https://www.agora.mfa.gr/images/%CE%95%CE%A3%CE%A3%CE%95_2025_EN_Final.pdf
22. Ναυτιλία Μικρών Αποστάσεων Τάσεις, προκλήσεις και επίδραση στην Ελληνική οικονομία Αθήνα, Σεπτέμβριος (2025) https://iobe.gr/wp-content/uploads/2025/09/RES_05_F_18092025_REP_GR.pdf
23. Regulation (EU) 2023/1805 of the European Parliament and of the Council of 13 September 2023 on the use of renewable and low-carbon fuels in maritime transport, and amending Directive 2009/16/EC (Text with EEA relevance) <https://eur-lex.europa.eu/eli/reg/2023/1805/oj/eng>

24. Shortsea Shipping in Domestic Transport: Trends, Challenges and Impact on the Greek Economy, Press Release (2025)
<https://www.shortsea.gr/en/2025/09/19/shortsea-shipping-in-domestic-transport-trends-challenges-and-impact-on-the-greek-economy/>
25. Stefanidis, Abraham and Ioannidis, Anthony (2007)¹, Entrepreneurial Networks in Highly Globalised Industries: The Case of the Greek Shipping Industry. International Journal of Networking and Virtual Organisations, Vol. 4, No. 2, pp. 189-200, 2007, Available at SSRN: <https://ssrn.com/abstract=1016802>
26. UNCTAD Review of Maritime Transport. Staying the Course in Turbulent Waters (2025), United Nations, Geneva, 2025 https://unctad.org/system/files/official-document/rmt2025_en.pdf
27. UGS calculations, based on data from S&P Global Market Intelligence, February 2025 & UGS Annual Reports, 2021-2024,
28. Union of Greek Shipowners official site <https://ugs.gr/en/>
29. What the EU is doing to create an EU-wide classification system for sustainable activities https://finance.ec.europa.eu/sustainable-finance/tools-and-standards/eu-taxonomy-sustainable-activities_en
30. Zahra Ahmed (2025) Top 5 Countries Dominating Global Shipbuilding in 2025, Marine Insight, 17 July 2025 <https://www.marineinsight.com/top-5-countries-dominating-global-shipbuilding-in-2025/>