

PEER REVIEW OF THE ROMANIAN SHIPBUILDING INDUSTRY

Q1 2024

DAMEN
DAMEN SHIPYARDS GALATI



Foreword

This report was prepared under the Council Working Party on Shipbuilding (Shipbuilding Committee) peer review process. The opinions expressed and the arguments employed herein do not necessarily reflect the official views of OECD member countries. The report will be made available on the Shipbuilding Committee website: <http://www.oecd.org/sti/ind/shipbuilding.htm>.

This document, as well as any data and any map included herein, are without prejudice to the status of or sovereignty over any territory, to the delimitation of international frontiers and boundaries and to the name of any territory, city or area.

© OECD 2023; Cover photo: © SANTIERUL NAVAL DAMEN GALATI S.A.

The use of this work, whether digital or print, is governed by the Terms and Conditions to be found at <http://www.oecd.org/termsandconditions>.

Table of Contents

1. Executive summary.....	3
2. Introduction.....	4
3. Global perspective.....	5
4. Structure and characteristics of the Romanian shipbuilding industry	7
4.1. The Romanian shipbuilding industry	7
4.1.1. Structure of the industry.....	7
4.1.2. Production and Orders.....	10
4.1.3. Employment and skills.....	14
4.2. Productivity and innovation	15
4.3. Construction of niche vessels.....	16
4.3.1. Environmentally friendly vessels	16
4.1.1. Polar and research vessels.....	17
4.2. Maritime equipment industry	17
4.3. Repair and retrofit activities.....	17
4.4. Competitiveness.....	18
5. Government policies affecting the shipbuilding industry	20
5.1. EU regulatory framework	20
5.1.1. EU treaty provisions	20
5.2. National support measures	22
5.2. Decarbonisation and environmental policy.....	23
5.3. Social and labour policy.....	24
5.4. International cooperation and partnerships	24
6. Conclusion	25

1. Executive summary

Longstanding shipbuilding heritage and regional concentration: With its strategic position along the Black Sea and the Danube River, Romania boasts a rich heritage in shipbuilding, its origins tracing back to the early 1900s. Especially in the Southeast region, the industry remains pivotal, significantly contributing to employment and the regional economy. The production in Romania is concentrated in nine shipyards, most privately owned, with construction focused on small to mid-sized ships, including tugboats, offshore and navy vessels, barges, inland vessels, container ships, chemical tanks and fishing vessels.

Drop in ship construction in recent years: The Romanian shipbuilding industry has navigated periods of growth and strain in the past 20 years. From 2012 until 2017, Romania accounted for a significant percentage of ship completions in the European Union (EU), producing up to 21% of selected vessels in CGT terms in 2016. By 2022, this share had fallen to 2% of the EU's ship completions in CGT, corresponding to 44,073 CGT.

Significant short-term external disruptions: The Romanian shipbuilding sector faces several challenges. Disruptions linked to the COVID-19 pandemic and Russia's war of aggression against Ukraine strain the sector, with Romanian shipbuilders witnessing a notable surge in input prices, especially for steel, continue to affect the industry.

Challenges in labour supply and attracting young talent: Another key challenge for shipbuilding in Romania is labour supply, as the Romanian shipbuilding industry struggles to attract talent and is faced with the country's pronounced depopulation trend. While specialised shipbuilding/ marine technology courses are offered in local institutions and vocational programmes, Romania's shipbuilding companies struggle to find qualified workers, leading local shipyards to rely increasingly on foreign labour. Furthermore, there is a notable lack of female representation in the industry.

Innovation and productivity challenges: Romania's economy-wide R&D intensity remains one of the lowest in the EU and innovation continues to be a challenge for the Romanian industrial landscape, with the shipbuilding industry being confronted with low productivity growth, prolonged build times and technological gaps. Furthermore, some collaboration opportunities with educational institutions remain untapped.

Developing a targeted shipbuilding strategy: To tackle both low innovation and shortage of labour, Romania's shipbuilding sector could benefit from a targeted industry strategy. Currently, the Romanian government initiatives do not include a distinct shipbuilding dimension, tailored specifically to the sector's needs and the challenges it faces.

Opportunities in EU projects on R&D and the green transition. The industry could increase collaboration with the EU on co-funded projects to increase support for R&D and further invest in training and development to help upskill the local workforce and attract more talent to the sector. It could also make use of its modern facilities to participate in the construction of environmentally friendly vessels and thus diversify its portfolio with a focus on eco-friendly or advanced technology ships.

2. Introduction

In 2012, the OECD's Council Working Party on Shipbuilding (WP6), which became the OECD Shipbuilding Committee on January 1, 2024, introduced a peer review process focused on support measures provided by governments to their shipbuilding sectors. Under this process, each economy participating in the Shipbuilding Committee undergoes an in-depth study of its shipbuilding industry and related government measures. Non-Shipbuilding Committee economies may also join the process and be the subject of a Shipbuilding Committee review.

The main goal of the peer review process is to strengthen the identification of government policies, practices and measures affecting the shipbuilding sector and to support the discussion of these measures within the Shipbuilding Committee. The analysis of the support measures is accompanied by contextual details of the industry to provide a rich discussion of shipbuilding policies and their impact. A key element of the process is the active debate and discussion of peer review drafts by Shipbuilding Committee participants, with a view to promoting transparency and sharing experiences.

Romania, together with Croatia, Denmark, Italy and Poland is subject to a Shipbuilding Committee peer review in 2023, following the reviews of Japan (2012), Portugal (2013), Korea (2014), Germany (2015), Norway (2016), Finland (2017), the Netherlands (2019) and Türkiye (2021). In 2018, the Shipbuilding Committee decided to conduct an ad hoc review of the shipbuilding sectors in selected non-Shipbuilding Committee members, including China, Indonesia, Malaysia, the Philippines, Singapore, Chinese Taipei and Viet Nam. In 2020, the Secretariat also prepared a report on China's shipbuilding industry and policies affecting it.

The information in this report is based on publicly available information, statistical series available to the Secretariat, Romania's response to the peer review questionnaire, and discussions with government officials and stakeholders during the Secretariat's mission to Romania (16-19 October 2023). The Secretariat expresses its special gratitude to the government and industry stakeholders who participated in the review and especially the successful mission to Romania.

The analysis focuses on the shipbuilding and marine equipment industry, but also provides information on the repair and conversion facilities. The report includes three substantive parts: global perspective, the structure and characteristics of the Romanian shipbuilding and marine equipment industry and finally policies affecting the shipbuilding and marine equipment industry.

3. Global perspective

Since joining the European Union (EU) in 2007, Romania has undergone a remarkable economic transformation, nearly halving the difference of its GDP per capita to the OECD average (OECD, 2022^[11]). However, despite its rapidly growing GDP and efforts to bridge divergence in living standards, Romania's GDP per capita remains significantly below the EU average. Challenges such as its institutions, which need to be modernised in some cases, a shortage of skilled labour, connectivity and vulnerability to climate change impacts, limit more inclusive and sustainable growth in Romania (European Commission, 2022^[21]). Additionally, the COVID-19 pandemic and Russia's war of aggression against Ukraine have tested the resilience of the Romanian economy.

The COVID-19 pandemic significantly impacted Romania's economy, causing a 3.7% drop in GDP in 2020. However, showing resilience, the country's GDP rebounded and surpassed its pre-crisis GDP levels by 2021 (OECD, 2022^[11]). In 2022, Romania experienced a robust 4.8% economic growth, primarily driven by private consumption and significant advancements in the information and communications technology sector as businesses shifted towards digital technologies. Despite these positive trajectories, the country was affected by wider global economic challenges. By December 2022, annual inflation surged to 16.4%, with energy prices, including electricity and gas, soaring by 39.7% and food prices by 22.1%, respectively (World Bank, 2023^[31]).

These recent macroeconomic developments strongly impact Romania's shipbuilding industry, presenting challenges for its global position and sustainability. In 2022, the EU produced approximately 7% of ships in the world in CGT terms for selected vessel types mentioned in Table 1 (containers, bulkers, tankers, pure car carrier (PCC), tugs, offshore, ro-ro, dredgers and ferries), increasing from 6% in 2021 and 5.2% in 2020 (Figure 1).

Table 1. Completions of selected seagoing vessels above 100 GT by ship type in the world, the European Union and by Romania 2012-2022

Ship type	World	European Union		Romania		
	CGT ('000s)	CGT ('000s)	% of World	CGT ('000s)	% of World	% of EU
Containers	67 315	428	0.64%	407	0.60%	95.09%
Bulkers	125 157	368	0.29%	212	0.17%	57.61%
Tankers	121 123	1 641	1.35%	842	0.70%	51.31%
PCC	6 001	129	2.15%	65	1.08%	50.39%
Tugs	10 251	739	7.21%	150	1.46%	20.30%
Offshore	24 061	1 698	7.06%	313	1.30%	18.43%
Ro-ro	3 638	539	14.81%	22	0.60%	4.08%
Dredgers	2 356	864	36.68%	35	1.49%	4.05%
Ferries	9 941	1 534	15.43%	59	0.59%	3.85%

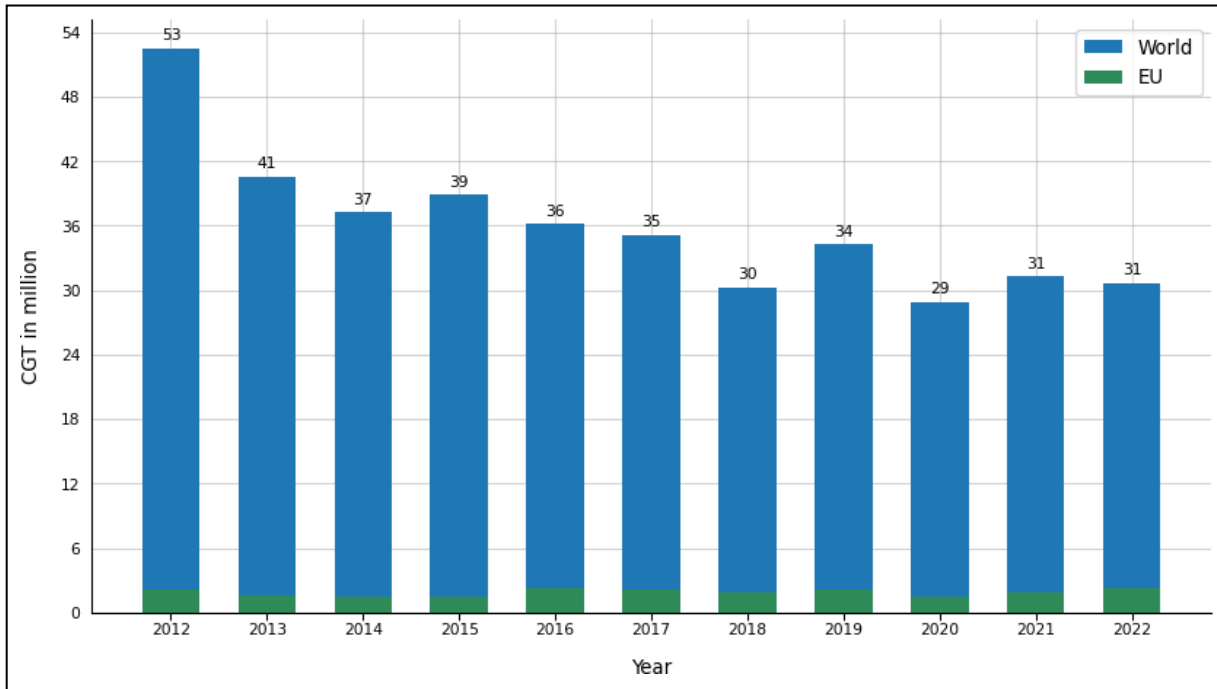
Note: This Figure includes all seagoing vessels from 100 GT.

Source: OECD calculations based on Clarkson Research Services Limited (September 2023), *World Fleet Register*, <https://www.clarksons.net/wfr>

Romania's shipbuilding industry accounted for 2% of the European Union's ship completions in CGT in 2022, corresponding to 44,073 CGT. This represents a decrease from previous years, where Romania

accounted for 6% of EU ship completions in 2021, corresponding to 101,1045 CGT, and 5% in 2020, corresponding to 63,954 CGT (Clarksons, 2023^[4]). From 2012 until 2017, Romania accounted for a larger percentage of ship production in the EU, producing on average 16% of the ships built in the EU in CGT terms for these selected vessels, reaching 21% in 2016 (see Figure 2).

Figure 1. Completions of selected seagoing vessels worldwide and in the European Union in terms of CGT, 2012-2022

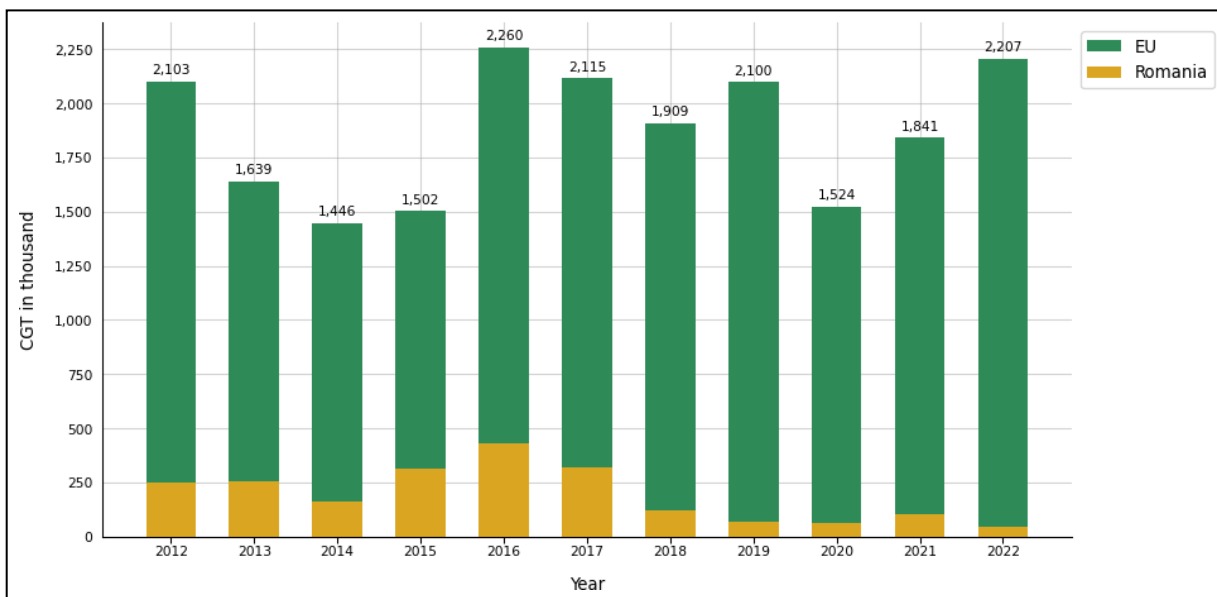


Note: This figure includes all seagoing vessels, presented in Table 1, from 100 GT.

Source: OECD calculations based on Clarkson Research Services Limited (September 2023), *World Fleet Register*

<https://www.clarksons.net/wfr>

Figure 2. Completions of selected seagoing vessels in the European Union and Romania in terms of CGT, 2012-2022



Note: This figure includes all seagoing vessels, presented in Table 1, from 100 GT.

Source: OECD calculations based on Clarkson Research Services Limited (September 2023), *World Fleet Register*

Between 2012 until 2022, Romania was the largest EU containerships producer, accounting for 95% of ships in CGT in the EU, equivalent to 0.6% of the world's total. Romania has also been producing about 50% of the EU's CGT of both bulkers and tankers, equivalent to respectively 0.2% and 0.7% of the world's ship production in CGT. On the international worldwide scale, Romania has produced about 1.5% of both tugs and dredgers (Clarksons, 2023^[4]).

4. Structure and characteristics of the Romanian shipbuilding industry

4.1. The Romanian shipbuilding industry

Romania boasts a rich heritage in shipbuilding and repair, with its origins tracing back to the early 1900s. It is a significant sector in the country's economy, with several major shipyards and a diverse range of ship construction and repair capabilities. The industry has experienced both growth and challenges over the years, influenced by global market trends and the cyclical nature of the maritime transportation market. The shipbuilding sector in Romania predominantly revolves around crafting small to mid-sized ships, including tugboats, offshore and navy vessels, barges, inland vessels, container ships, chemical tanks and fishing vessels. Modern infrastructure and technology characterise the country's shipyards, facilitating the production of ships that align with global benchmarks. Some of the industry's largest shipyards are Damen Shipyards Galati, Damen Shipyards Mangalia, Vard Braila, Vard Tulcea and Santierul Naval Constanta.

Romania's strategic location along the Black Sea coastline illustrates its status as an important centre for marine commerce and transit. Romania boasts a robust water and maritime transport infrastructure, prominently featuring the Danube River and the Black Sea. Ranking 12th in Europe in water/maritime transport, Romania represents 29% of the surface area of the Danube Basin. The port of Galați stands out as a notable shipbuilding hub (ICDPR, 2020^[5]).

Crucially, the shipbuilding industry is a cornerstone of the Southeast region, with significant operations and a high number of employees in five shipyards located in Brăila, Galați, Tulcea, Mangalia, and Constanța. Shipbuilding companies, such as Damen Shipyards Mangalia, Damen Shipyards Galati and Vard Tulcea SA, are among the region's top employers in 2023. This also highlights the shipbuilding sector's important role in the region's employment and economic landscape (EURES, 2023^[6]).

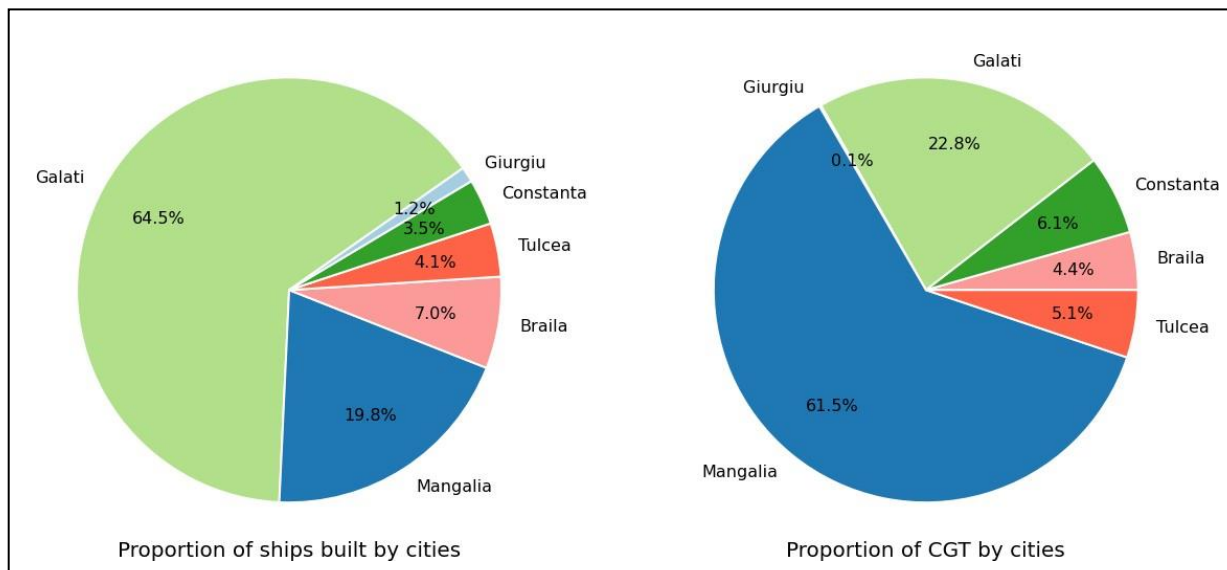
4.1.1. Structure of the industry

According to the OECD calculations, in the last decade, 62% of Romania's CGT were produced in the city of Mangalia, by the Black Sea, corresponding to 20% of all vessels produced by Romania. Mangalia is home to the Santierul Naval shipyard and the Damen Mangalia shipyard which focuses on the production of tankers, bulkers and containerships, and vessels of larger CGT capacity. Galati represents 65% of vessel production, corresponding to 23% of CGT production. Located by the Danube River, Galati is home to the Damen Galati Shipyard, which focuses on the construction of patrol ships, offshore vessels and cruise ships, as well as on repairs.

Between 2012 until 2022, nine shipyards represented most vessels built and CGT produced in Romania. Shipyards like Damen Shipyards Galati, Vard Tulcea, Vard Braila, Piriou ATG Giurgiu shipyards, Severnav Shipyard and Orsova Shipyards are focused on new production. Only two of the main shipyards, Santierul Naval Constanta and Damen Shipyards Mangalia advertised working on conversion, repair work and retrofitting of vessels.

Out of the nine main shipyards identified, all are privately owned with five of them owned by foreign European large shipyard groups, and the other four owned by domestic Romanian entities. At least five of these shipyards were privatised between 1999 and 2003. Indeed, both Damen Galati and Damen Mangalia are, since 1999 and 2017 respectively, owned by the Dutch company Damen Shipyards Group. Another set of two shipyards, Vard Braila and Vrad Tulcea are owned by the foreign company Vard Group, headquartered in Italy, which has been in the shipbuilding business since over 200 years. These shipyards were respectively acquired by the Vard Group in 2003 and 2000. Other shipyards have been privatised in the early 2000's as well, such as the Orsova shipyard and the Constanta shipyard, which are in major part owned by domestic players.

Figure 3. Proportion of number of ships built and CGT by region, 2012-2022



Note: This figure includes all seagoing vessels from 100 GT.

Source: OECD calculations based on Clarkson Research Services Limited (September 2023), *World Fleet Register*

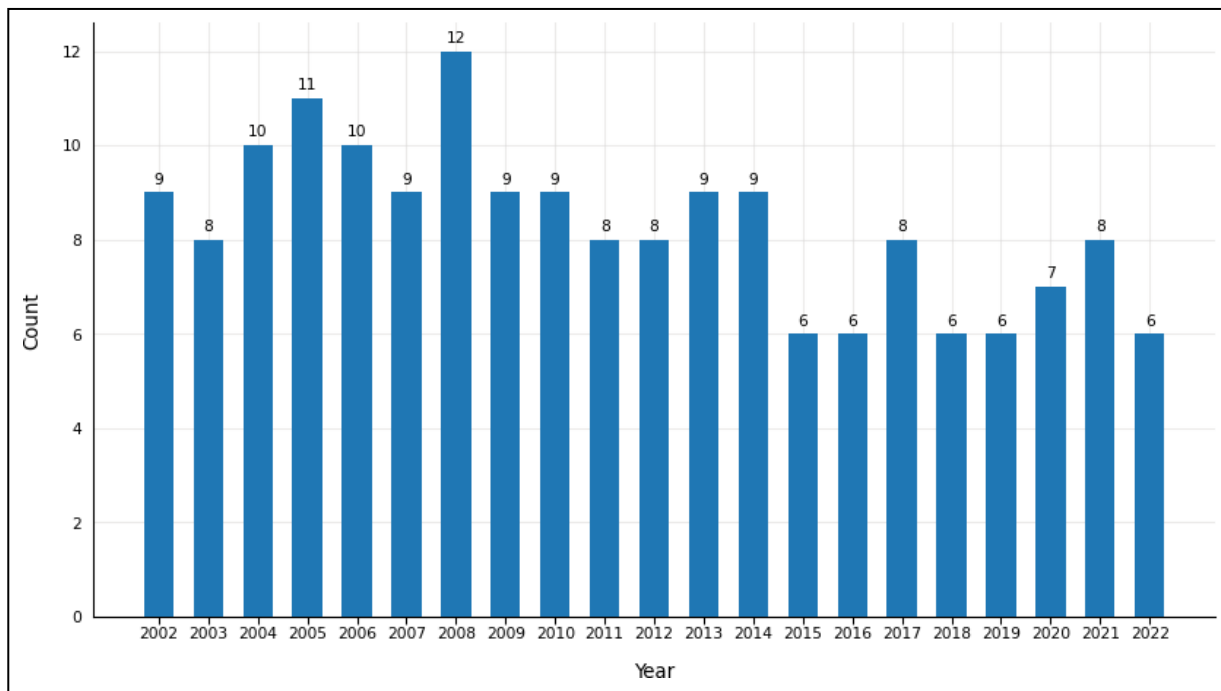
<https://www.clarksons.net/wfr>

Table 2. Shipyard ownership status in Romania

Shipyards	Production Programme	Ownership	Location	Year Established
Damen Galati	Newbuilding	Private (foreign)	Galati	1893
Damen Mangalia	Repair, retrofit, hull works, painting machinery electrical	Private (foreign)	Mangalia	1976
Vard Braila	Hull manufacturing and partially outfitted vessels Newbuilding	Private (foreign)	Braila	1940
Vard Tulcea	Hull manufacturing and early outfitting of vessels Newbuilding	Private (foreign)	Tulcea	1975
Severnav	Newbuilding	Private (domestic)	Drobeta-Turnu Severin	1852
Santierul Naval Orsova S.A.	Newbuilding	Private (domestic)	Orsova	1890
Santierul Naval Constanta S.A.	Newbuilding, ship repair and conversions	Private (domestic)	Constanta	1892
Shipyard ATG Giurgiu Srl	Newbuilding	Private (foreign)	Giurgiu	1897

Source: OECD calculations based on Clarkson Research Services Limited (September 2023), *World Fleet Register* <https://www.clarksons.net/wfr>, on S&P Maritime Portal, IHS, (September 2023), *Sea Web Ships*

Figure 4. Number of operating shipyards with orders in Romania, 2002-2022



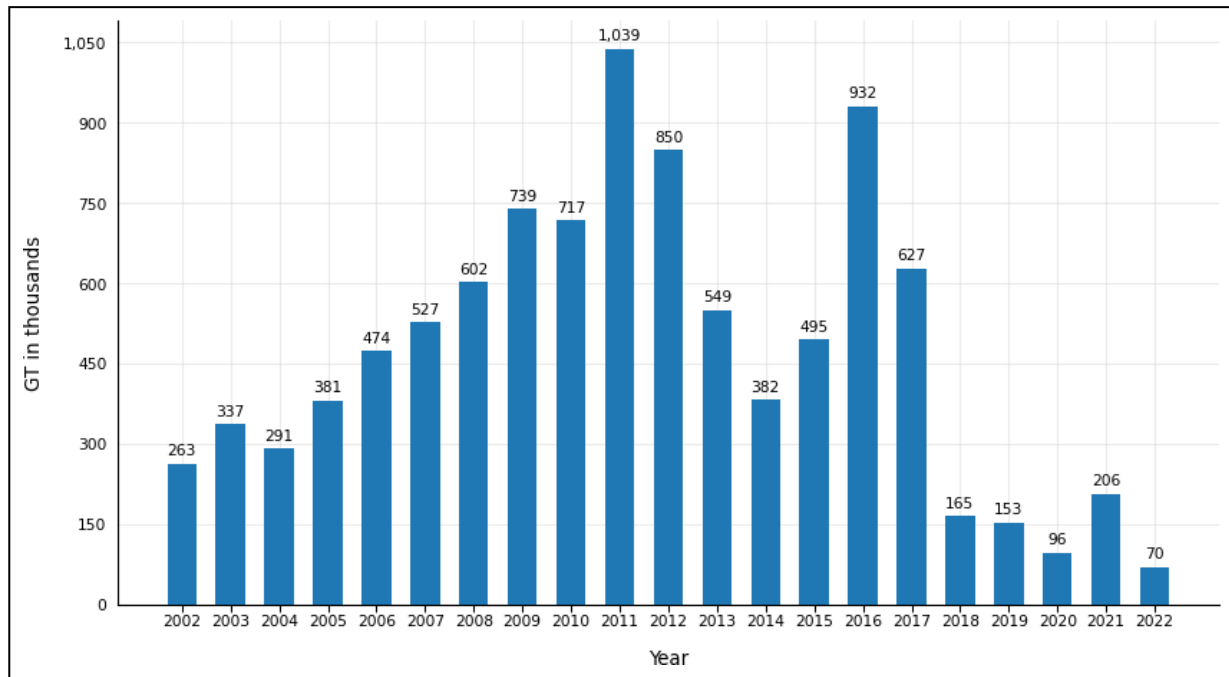
Source: OECD calculations based on S&P Maritime Portal, IHS, (September 2023), *Sea Web Ships*
<https://maritime.ihs.com/Home>

Figure 4 shows the number of operating shipyards that produce vessels overtime, with a minimum of six active shipyards and a maximum of nine between 2002 and 2022. From 2002 until 2014, there were on average nine operating shipyards, followed by a decrease in 2015 onwards reaching an average of about seven operating shipyards.

4.1.2. Production and Orders

Over the last decade, an average of 44 vessels were built per year. There has been a decrease in production since 2019, which could reflect the COVID-19 pandemic and the economic slowdown worldwide (Figure 5). The future orderbook does show that 23 vessels have already been contracted for 2023, 2024 and 2025, showing a pick-up of activity in the upcoming years.

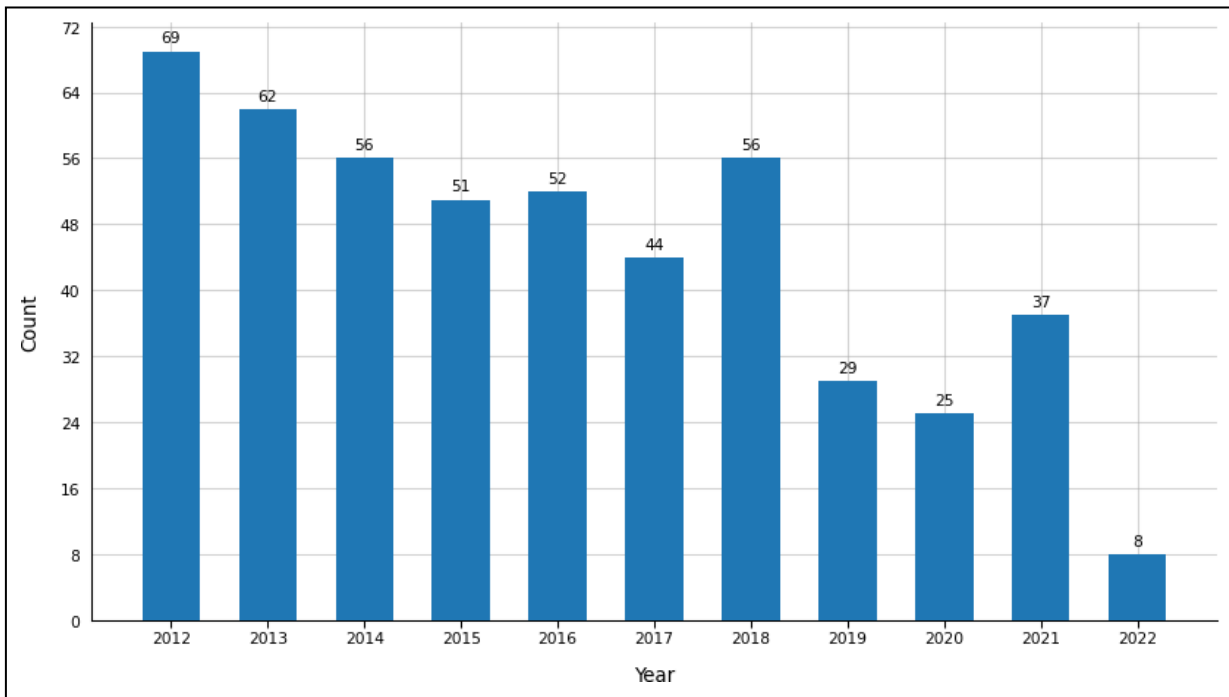
Figure 5. Number of seagoing vessels built in Romania, 2012-2022



Source: OECD calculations based on S&P Maritime Portal, IHS, (September 2023), *Sea Web Ships*
<https://maritime.ihs.com/Home>

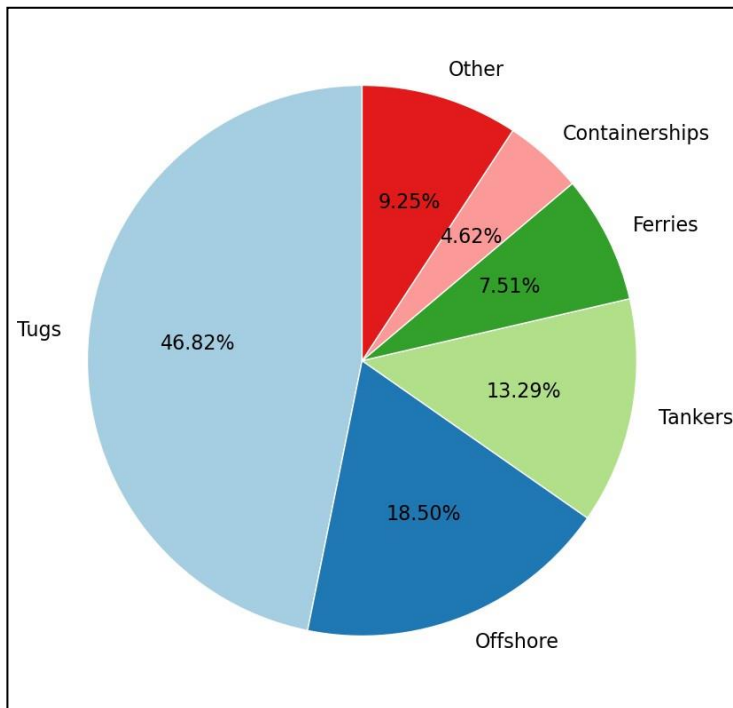
Delving deeper into the production of these vessels, Figure 6 shows the evolution of GT produced over time. With a peak in 2011 with 1 039 000 GT produced and a minimum reached in 2022 with 70 000 GT, the GT produced between 2002 and 2022 was on average 471,191 per year. In line with a decreasing number of vessels produced and of active shipyards, from 2018 onwards, there has been a lower amount of GT averaging 138,000 GT. As of September 2023, future production is expected to reach 102,828 GT in 2023, 62,072 in 2024 and, as of now, 28,071 in 2025.

Figure 6. Completions of seagoing vessels by Romanian shipyards in terms of GT, 2002-2022

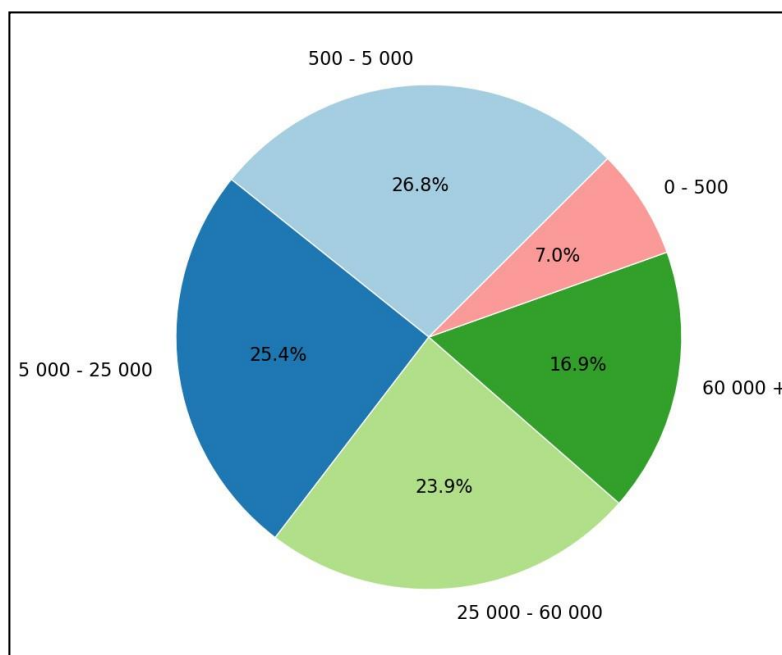


Source: OECD calculations based on S&P Maritime Portal, IHS, (September 2023), *Sea Web Ships*
<https://maritime.ihs.com/Home>

Figure 7. Proportion of vessel type, 2012-2022



Note: Tankers include crude, product and chemical tankers; other vessels include bulkers, ro-ro, PCC and dredgers.
 Source: OECD calculations based on S&P Maritime Portal, IHS, (September 2023), *Sea Web Ships*
<https://maritime.ihs.com/Home>

Figure 8. Proportion of vessel per GT, 2012-2022

Source: OECD calculations based on S&P Maritime Portal, IHS, (September 2023), *Sea Web Ships*
<https://maritime.ihs.com/Home>

Table 3. Selected examples of shipyards and their vessel production

Shipyards	Non-exhaustive type of vessels	Ships built since establishment
Damen Galati	Patrol ships, offshore vessels, dredgers, barges, super yachts	649
Damen Mangalia	Containerships, bulker carriers, tankers (RoPax), and ferries	180
Vard Braila	Offshore vessels cruiseships, icebreaking tugs	305
Vard Tulcea	Outfitted vessels	274
Severnav	Tankers (chemical and gas), containerships, ferries	419
Santierul Naval Orsova S.A.	Chemical tankers, containerships, ferries, barges	165
Santierul Naval Constanta S.A.	Chemical tankers, aframax and suezmax tankers, bulk carriers	129
Shipyards ATG Giurgiu Srl	passenger vessels, cargo ships	84

Source: Companies website and questionnaire

According to the S&P Maritime Portal (Figure 7), over the last decade, close to 47% of vessels built in Romania were tugs, followed by offshore vessels (19%) and tankers (13%). This is also reflected in the proportion of the GT of the vessels produced. Figure 8 shows that between 2012 until 2022 about one-third (34%) of vessels built were of a size between 0 and 5000 GT, 25% were of a size between 5000 and 25000, and 17% were of a size larger than 60000.

4.1.3. Employment and skills

The shipbuilding industry in Romania plays an important role in the economic and industrial employment in several parts of the country, in particular in the Southeast region. An assessment of the employment across the main shipyards gives insight into the scale and significance of this sector. As illustrated in Table 4, the industry has a substantial workforce, with certain shipyards emerging as major employers. Particularly, Vard Tulcea and Damen Galati stand out as the largest employers, indicating their significant contribution to the industry's overall employment.

Table 4. Estimated employees in main shipyards

Shipyards	Employees
Damen Galati	1 700
Damen Mangalia	1500
Vard Braila	1680
Vard Tulcea	2700
Severnav	485
Santierul Naval Orsova S.A.	356
Santierul Naval Constanta S.A.	1925

Source: Companies' websites and questionnaire

The shipbuilding industry in Romania is significantly impacted by labour challenges across its economy. Romania faces a pronounced depopulation trend, primarily driven by strong emigration patterns, particularly affecting the skilled labour segment. Since 2000, the population decreased from 22.4 million to 19 million in 2021, with outward migration accounting for over three-quarters of this decline. These developments were amplified post-EU accession in 2007, resulting in a significant Romanian diaspora spread across EU and non-EU countries (European Commission, 2022^[2]).

In addition, Romania's shipbuilding sector faces several sector-specific employment and skills challenges. The country's shipyards, equipped to deliver an array of marine technologies, remain impacted by the scarcity of both high-skilled and less skilled labour. Shipyards require a wide spectrum of specialised skills, from shipbuilding and design experts to mechanical, electrical and electronic control engineers. Romania's longstanding tradition in vocational education, coupled with specialised tertiary programmes in marine technology, help develop a well-educated workforce for the shipbuilding sector.

Prominent educational institutions, like the University "Dunarea de Jos" Galati, the University Ovidius Constanta, Naval Academy "Mircea cel Batran", and the Maritime University of Constanta, offer targeted courses for the shipbuilding industry. Furthermore, shipyards themselves offer training centres which help specialised learning. Nonetheless, the sector often struggles to attract talent or retain educated labour domestically due to graduates with backgrounds relevant to shipbuilding finding work in other sectors of the economy (Spataru, 2015^[7]). Consequently, shipyards increasingly resort to foreign labour imports to bridge the skill gap.

Examples of these challenges are the Vard Braila and Vard Tulcea shipyards. Faced with considerable workforce challenges, the Braila and Tulcea yards employed 130 and 300 Vietnamese workers, respectively, between 2018 and 2019 (TradeWinds, 2018^[81]). Additionally, Romanian shipyards have hired foreign workers from Bangladesh, Pakistan, Brazil and Sri Lanka. The integration of foreign labour, however, presents challenges, including language barriers (potentially compromising health and safety), underscoring the critical workforce demand. The intricacy and strenuous nature of shipbuilding have made it less appealing to the local workforce, driving companies to seek talent overseas.

The broader VARD network, which comprises shipyards in Norway, Brazil, and Vietnam, has capitalised on its international presence by transferring employees across borders to meet its labour demands. Similarly, the Damen group has instituted a rotation system for its workforce. This system permits 200-400 Romanian workers to undertake assignments abroad for several months, after which they can revert to their positions in Romanian shipyards, increasing flexibility for workers. Given the sustained demand forecasted in the coming years, this labour import trend is poised to persist.

4.2. Productivity and innovation

The development of Romania's shipbuilding sector strongly depends on its capacity for innovation and productivity. The challenges faced in these areas not only impact the country's broader economic prospects but also deeply influence sector-specific activities, such as those seen in the shipbuilding industry.

Romania's R&D intensity is the lowest within the European Union. As of 2020, Romania's R&D expenditure constituted 0.47% of its GDP, which falls significantly short of the targeted 3%. While there has been an annual increase of 1.4% in R&D expenditure since 2000, it remains low when benchmarked against most other EU Member States. Romania also lags in terms of government support for R&D relative to GDP (European Commission, 2022^[21]).

Innovation consistently emerges as a main challenge for the Romanian industrial landscape and its broader economy. The "Romania: National Strategy for Competitiveness 2014 – 2020" underscores the country's relatively weak innovation system and its implications for competitiveness. This assertion is substantiated by the Global Competitiveness Report of 2015-2016, which places Romania 54th out of 140 countries in terms of the Global Competitiveness Index and 84th for innovation. The European Innovation Scoreboard also denotes Romania as a 'modest innovator', with performance metrics often below the EU average (European Commission, 2022^[21]).

Policy frameworks such as the National Research, Development, and Innovation Strategy (SNCDI) 2014-2020 have guided Romania's R&D initiatives. This strategy has now given way to the National Strategy for R&I and Smart Specialisation 2021-2027, which integrates Romania's smart specialisation strategy and aims to invigorate the Romanian economy via innovation, advance the country's research contributions, and solidify the role of innovation.

Romania's shipbuilding industry faces several specific productivity challenges. While global benchmarks report consistent enhancements in ship completion rates and expedited build times, Romanian shipyards often fall behind, characterized by prolonged build durations and limited throughput. Technological alignment with global standards remains a concern. This technological lag not only impedes production efficiency but also dents global competitiveness. Concurrently, the industry's R&D investments are modest, signalling an innovation deficit. Furthermore, logistical operations, paramount to shipbuilding, have faced disruptions, accentuated by global crises like COVID-19. Such disturbances inflate costs, hamper material provisioning, and delay strategic partner engagements.

Effective management is vital, given the intricate shipbuilding processes. Collaboration remains an area with untapped potential; deeper synergies between shipyards, shipbuilding entities, academic institutions, and research centres could unlock significant value and opportunities.

Box 1. EU Cooperation on Black Sea Blue Economy

The Common Maritime Agenda (CMA) for the Black Sea aims to boost the sustainable Blue Economy in the region. This initiative encourages EU member countries, including Romania, to engage in environmentally sustainable and economically viable maritime practices, enhancing regional collaboration and growth.

Romania's participation in the CMA underscores its commitment to global competitiveness. By prioritising healthy marine ecosystems, a robust blue economy and attracting investments, the CMA can support Romania's efforts towards a sustainable and productive shipbuilding industry.

For Romania's shipbuilding sector, the CMA could offer an opportunity to modernise and align with broader EU objectives. The initiative's focus on a scientific, evidence-based approach, specifically the Strategic Research and Innovation Agenda for the Black Sea (SRIA), could help guide Romania's shipbuilding sector in making informed decisions in shipbuilding, optimizing productivity and innovation.

Romania's engagement in other agreements, notably the EU Strategy for the Danube Region and bilateral projects with European Economic Area and EU partners, showcases its active role in international R&I collaborations. Despite some challenges— with some programmes being 'excessively oversubscribed'—such partnerships emphasise Romania's efforts in advancing its maritime sector through EU-backed Blue Economy strategies.

Source: (Common Maritime Agenda for the Black Sea, 2023^[9]) (European Commission, 2022^[2]) (European Union, 2023^[10])

4.3. Construction of niche vessels

Romanian shipyards have historically constructed an array of vessels including containerships, bulkers, tankers, cruise ships and offshore vessels. Recently, they have begun to diversify, focusing on niche vessels characterised by reduced greenhouse gas (GHG) emissions, utilisation of alternative fuels, suitability for extreme (polar) conditions and research applications.

Furthermore, Romanian shipyards are at the forefront of pioneering construction initiatives, exemplified by their involvement with the Yara Birkeland project. Initiated in 2017, this venture aimed to introduce the world's inaugural autonomous vessels (Dixon, 2020^[11]).

4.3.1. Environmentally friendly vessels

Over the last decades Romanian shipyards have participated in the construction of environmentally friendly vessels. These environmentally friendly vessels can be defined as both low emitting vessels and vessels which will enhance sustainability efforts. For example, low emitting vessels have been equipped with engines that run on alternative fuels such as liquefied natural gas (LNG), methanol or batteries. These shipbuilding projects are in line with the call for the decrease of GHG emissions of vessels and decarbonisation efforts. In addition, more shipyards have produced vessels that will be used for sustainability projects such as offshore vessels on wind farms.

Vessels with alternative fuels have been built by Romanian shipyards. An example of this are polar cruise ships, including the construction in the Vard Tulcea shipyard of an icebreaker with a dual-fuel proportion

system, powered by both high-capacity batteries and LNG. This project signed with HardHoldings, allows

the shipyard to participate in the construction of icebreakers for polar expeditions, continuing and adding to the Romanian expertise of building polar vessels (Tan, 2017^[12]).

Vessels used for sustainable purposes have also been increasingly ordered in Romanian shipyards. This is the case of multiple support vessels for wind farm operations, contracted by Norwegian and British companies, ordered in 2023 and 2021, respectively. Both Braila and Tulcea shipyards have participated in the production of these vessels. These vessels, which will be methanol ready, are not only able to use alternative fuels, but will also be used for the offshore wind market, reflecting a sustainable production of energy (Willmington, 2023^[13]). This allows Romanian shipyards to participate in sustainability efforts, first on a production of low-GHG vessels and through the function of those said vessels (Dixon, 2022^[14]).

4.1.1. Polar and research vessels

Romanian shipyards have also participated in the construction of polar vessels and research vessels. These included projects such as the construction of a krill fishing vessel, which is expected to be used for sustainable fishing operations in Antarctica (Tan, 2017^[15]). In addition, the shipyard of Galati participated in the production of other niche vessels such as the Australian icebreaker. This icebreaker was built to accommodate the resupply of Antarctic stations, icebreaking, transport and research campaigns, and scientific research (Wainwright, 2021^[16]). Other shipyards, such as Tulcea, have worked on research expedition vessels.

4.2. Maritime equipment industry

Romania does not have a native marine equipment industry. The primary sources of marine equipment for its shipyards are predominantly European and Chinese suppliers. Romanian shipyards currently have to work with challenges related to equipment delivery schedules and orchestrating supply chain cycles that span several months.

4.3. Repair and retrofit activities

The Romanian shipbuilding industry has a robust segment dedicated to repair and retrofitting operations. Both commercial and passenger ships turn to Romanian shipyards for a variety of retrofitting services, from regular maintenance to specialized system enhancements. In the Clarkson's data for 2023 year-to-date, Romania ranks 15th worldwide among the top repair yard countries, based on the number of refurbishment and repair events (Clarksons, 2023^[4]). Recently, the Romanian shipbuilding sector saw an increase in repair and retrofit activities for ships, driven by shipowners' need to comply with new environmental standards set by IMO, including regulations on sulphur oxides (SO_x) emissions.

The ship repair segment is a vital contributor to Romania's shipbuilding sector. Upgraded shipyards present a broad array of maintenance and repair solutions suitable for vessels of all dimensions. Important yards in this domain include Damen Shipyards Mangalia and Santierul Naval Constanta. A distinctive characteristic of the Romanian ship repair industry is its cost effectiveness. Notable past conversion projects undertaken by the industry are the transformation of a Buoyancy Barge into a Desalination Plant, the conversion of Single Hull tankers to Double Hull variants, and the modification of Single Hull Aframax vessels to Post Panamax Bulk carriers (Schmidt and Dan, 2008^[17]).

4.4. Competitiveness

Table 5 provides a SWOT analysis of selected strengths, opportunities, weaknesses and threats of the Romanian shipbuilding industry and its competitiveness. It is based on data and analyses detailed in the previous sections of the report.

Romania's shipbuilding sector capitalises on its strategic Black Sea access and a trained, specialized workforce. The competitive cost structures, due to lower labour and operational costs compared to Western Europe, are reinforced by modern facilities and a diversified portfolio emphasizing niche small tonnage ships. Despite these strengths, the sector's growth is hampered by underinvestment in R&D and skilled labour training. The pronounced labour shortage necessitates dependency on foreign labour, notably from Southeast Asia.

Lack of a robust domestic marine equipment industry also risks impeding supply chain development, while outdated technologies in some areas may restrict efficiency and quality of production. Regulatory hurdles and financial access challenges further impede the sector's development and efforts to increase its competitiveness.

Looking to opportunities, growth vectors include network development through inter-firm collaborations within the EU, bolstering in-house capabilities. Training program enhancements can address local workforce gaps. Potential partnerships for labour importation, increased R&D investment, and a focus on green vessels present diversification opportunities. EU collaboration, particularly co-funded projects in line with the EU Green Deal or the Black Sea Blue Economy, offer expansion avenues.

At the same time, the sector is vulnerable to global economic shifts that can suppress ship demand. Intensified competition post-EU accession and emerging economies with reduced labour costs pose challenges. Regulatory changes and increasingly stringent environmental standards necessitate adaptive strategies. Resource mobilisation, both human and capital, remains a critical concern.

In summary, Romania's shipbuilding sector is rich in potential, but requires strategic interventions to mitigate weaknesses and threats. Leveraging its competitive advantages, addressing growth impediments, and harnessing opportunities can improve its global competitiveness in shipbuilding.

Table 5. SWOT analysis of the Romanian shipbuilding industry

Strengths	Weaknesses
<ul style="list-style-type: none"> • Strategic location: access to key Black Sea shipping routes • Skilled labour: tradition of vocational training in shipbuilding, high-skilled and specialised workforce • Competitive costs: lower labour and operational costs compared to many Western European counterparts, increasing cost-effectiveness of shipbuilding services • Modern facilities to produce high quality vessels • Diverse portfolio: strategic development of niche sectors + high expertise and specialisation in small tonnage ships (tugs, ferries) 	<ul style="list-style-type: none"> • Low productivity: low investments in R&D, innovation and training of skilled labour • Labour shortage: challenges in meeting the labour demands of the shipbuilding sector, often resulting in a dependence on foreign labour • Lack of domestic marine equipment industry to develop maritime supply chains and technology hubs • Framework conditions: access to finance, administrative and regulatory barriers to entrepreneurship and a lack of trust • Outdated technology: some parts of the sector rely on outdated methods and machinery, reducing efficiency and quality
Opportunities	Threats
<ul style="list-style-type: none"> • Develop networks: clusters and inter-firm networks, both in Romania and with companies in the EU as way to accumulate in-house capability in Romanian firms • Enhance training programs: investing in further training and development to help upskill the local workforce and attract more talent to the sector • Expand foreign labour partnerships: partnerships with countries to import labour and help mitigate local shortages • Technology adoption: increase investment into R&D and innovation and support uptake of new practices and technologies to improve productivity and competitiveness • Diversification: opportunity to diversify Romania's portfolio, with a focus on eco-friendly or advanced technology ships • Collaboration with EU: Projects co-funded by EU funds, often to support EU Green Deal, RePower EU and/or the Blue Economy around the Black Sea. 	<ul style="list-style-type: none"> • Global economic challenges: economic downturns can reduce global demand for new ships, impacting the shipbuilding industry • Competition: failure to prepare for increased competitive pressure following EU accession and from emerging economies with lower labour costs • Regulatory changes: international maritime regulations affect the types and standards of ships that need to be produced • Environmental concerns: increasing global emphasis on environmental conservation might require significant changes in practices, reduced water levels in the Danube river could present challenges to the operational efficiency of yards • Difficulty to mobilise human and capital resources: consequently, challenges in capitalising on the industry (esp. in innovation) as a source of growth and competitiveness

5. Government policies affecting the shipbuilding industry

The Romanian government has promoted an environment that supports growth and innovation in Romania's shipbuilding sector. Government initiatives are not characterised by a distinct set of comprehensive industrial and structural strategies tailored specifically to shipbuilding. Instead, there is a more horizontal approach, with a focus on policies and measures that can be applied across a wide range of industries.

5.1. EU regulatory framework

As a Member of the EU since 2007, Romania abides by the common and general regulations, policies, and strategies that are established under the functioning framework of the EU, and which fall within its exclusive competence.

5.1.1. EU treaty provisions

In accordance with Article 3 of the Treaty on the Functioning of the European Union, and considering all possible exceptions, the EU exercises exclusive competence in regulating a number of areas that are relevant, but not limited, to industry such as (a) common commercial policy; (b) the establishing of the competition rules necessary for the functioning of the internal markets; (c) customs tariffs and duties which shall cover all trade in goods; (d) the conservation of marine biological resources under the common fisheries policy, and (e) the exclusive competence for the conclusion of international agreements when its conclusion may affect common rules or alter their scope, among others.

With regard to areas that fall within the exclusive competence of the EU, Romania, as an EU Member State, shall legislate or adopt legally binding acts only if so empowered by the EU or for the implementation of EU acts. While the areas that refer to EU common and general regulations, policies, and strategies interact with a broader range of industries, they influence Romania's shipbuilding industry. Subsection 2 of Article 2, and Articles 4 and 6 of the Treaty on the Functioning of the European Union, confer a shared competence between the EU and Member States in certain areas where Member States might be able to legislate or adopt legally binding acts to the extent that the EU would not or has not yet exercised its competence, and also to coordinate, support or supplement regulations and policies that are already in place.

Areas of shared competence between the EU and the Member States can cover, for instance, social and employment policy, environmental and industry transition policy, internal market policy, consumer protection policy, and transport policy, among other policy areas, including those related to common concerns about security and public health issues.

5.1.1. Membership to international organisations

Considering the above-mentioned, Romania's shipbuilding industry has been shaped around the EU functioning framework. Furthermore, the sector has been influenced by Romania's membership to international Intergovernmental Organisations (IGOs) such as the World Trade Organization (WTO), where WTO standards, agreements, and global rules for international trade have been incorporated and enforced.

Beyond its impact on international trade, Romania's membership to the WTO has extended its effects on

Romania's social and labour standards. This is through the alignment of WTO Member States with international core labour principles outlined by the International Labour Organization (ILO) in areas

including freedom of association and no discrimination at work. Moreover, Romania has adopted the Agreement of Government Procurement (GPA) to regulate public procurement of goods and services based on principles of transparency, openness, and non-discrimination (World Trade Organization, 1996^[18]).

5.1.2. EU temporary measures and incentives

It is relevant to mention that, within the framework of the functioning of the EU, and in accordance with what is stipulated in subsection 5 of Article 168 and subsection 4 of Article 2 of the Treaty on the Functioning of the European Union, a number of temporary measures and incentives were deployed to address the exceptional challenges pertaining the Covid-19 pandemic and Russia's war of aggression against Ukraine.

Some of the temporary measures and incentives put in place to tackle the challenges arising from the COVID-19 pandemic and Russia's war of aggression against Ukraine continue in effect and may impact, among others, Romania's shipbuilding industry.

For instance, strategies such as NextGenerationEU, operating through the Recovery and Resilience Facility (RRF) and within the framework of the EU's post-COVID-19 recovery plan, have set the ambitious goal of making Europe climate-neutral by 2050 by, inter alia, investing in environmentally friendly technologies, which is expected to push forward Romania shipbuilding industry transition toward decarbonisation (European Union, 2020^[19]).

EU State Aid Temporary Framework has also given Romania a tool to support the economy in the face of the aforementioned crises by allowing the country to implement support measures that are not specifically directed to the shipbuilding industry but applicable to various sectors. It is important to note that the EU State Aid Temporary Framework expired in June 2022, except in the areas of investment and solvency support, which remain in effect until December 2023 (European Commission, 2020^[20]).

5.1.3. EU regulation on shipbuilding

As previously mentioned, the EU has established a set of common general regulations, policies, and strategies that influence industry in general and that affect or are foreseen to affect the Romanian shipbuilding industry. Nonetheless, in addition to the common general regulations, the EU has issued common specific regulations that exclusively affect the shipbuilding industry of the Member States.

Specific common regulations on shipbuilding established by the EU include i) EU Regulation 1257/2013 on ship recycling, which aims to improve the protection of human health and the EU marine environment, particularly regarding the proper management of hazardous materials on ships; ii) EU Regulation 2016/1013 on protection against injurious pricing of vessels, which addresses shipbuilders engaged in unfair pricing; iii) EU Directive 2009/21/EC, which aims to enhance safety and prevent pollution from ships flying the flag of a Member State; iv) EU Directive 2014/90/EU on Marine Equipment, which aims to increase marine safety and reduce the risk of marine pollution, and v) the International Convention for the Safety of Life at the Sea (SOLAS), which was ratified by all EU Member States.

Furthermore, as an EU member state, Romania is expected to implement EU regulations to encourage the decarbonisation of maritime transport. Starting January 2024, the EU Emissions Trading System (EU ETS) will include maritime CO₂ emissions from all large ships entering EU ports, irrespective of their flag. Additionally, the EU FuelEU Maritime regulation is set to be effective from January 2025 (European Council, 2023^[21]).

Finally, it should be noted that international maritime standards are developed by the International Maritime Organization (IMO), a United Nations (UN) specialised agency responsible for providing the regulatory framework for the shipbuilding industry.

5.2. National support measures

The shipbuilding industry in Romania is not supported through sector-specific schemes from the government. However, state aid and support measures are available to industries in general, meaning that shipbuilding companies in Romania can apply for state aid and support measures like any other industry if these measures comply with the EU State aid provisions.

Exim Banca Românească S.A bank, acting on behalf of and for the account of the state can, for instance, guarantee up to 80% of loans granted by commercial banks to support the working capital and investments of Romanian companies.

Considering the COVID-19 pandemic (between 2020-2022), and Russia's war on Ukraine (between 2022-2023), temporary state aid measures were approved based on the Temporary Framework for State Aid issued by European Commission in 2020. These measures were implemented through Exim Banca Românească S.A bank, acting on behalf of and for the account of the State.

To give an example, Exim Banca Românească S.A bank, acting on behalf of and for the account of the state, guaranteed up to 90% of loans granted by commercial banks and provided subsidised loans to companies that were directly affected by the COVID-19 pandemic and Russia's war on Ukraine. The aim of these loans was to cover the liquidity needs of the affected companies.

Between 2015-2023, Exim Banca Românească bank did not provide subsidised loans or guarantees to companies active in the shipbuilding sector.

The Romanian government has implemented various incentives designed to attract foreign investment, stimulate employment, promote research and innovation, and drive economic development. These incentives are set in accordance with EU regulations and the aid intensity ceiling established by the European Commission. Incentives encompass tax benefits, streamlined administrative procedures, and implementation of capacity-building programmes. They are granted based on the capital invested by a company, profit allocations, and the employment opportunities generated by the company. Although some of these incentives are directly targeted at the manufacturing sector, they are not specifically aimed at the shipbuilding industry.

Damen shipyard Galati, which has been continuously operating in Romania for over 130 years, can be used as an example of how Romanian regulations, policies, and practices have created an adequate environment for foreign companies to thrive in the shipbuilding sector. As the largest shipyard on the Danube, Damen shipyard Galati is one of the main employers in Romania and a significant contributor to the national economy.

Similarly, Damen shipyard Mangalia, has been operating on the Romanian Black Sea coast as a joint venture between Damen and the Romanian government. Nevertheless, as an alleged consequence of the implementation of Law 187/2023, on 28 June 2023, Damen's shipyard Mangalia joint venture was put to an end, and control over the shipyard has now passed to the Romanian government, leaving Damen's involvement limited to a minority shareholding. There have been discussions between the Damen group and the Romanian government on this matter.

Finally, Romania demonstrates a strong commitment to anti-corruption efforts; the Romanian government has implemented a comprehensive National Anticorruption Strategy (NAS 2021-2025) under the authority of the Ministry of Justice of Romania, of which the Romanian Parliament annually receives updates on the progress of its implementation.

Romania's previous National Anti-Corruption Strategy for 2016-2020 scored 71% in the OECD Public Integrity Indicator 1.3.4 for "Inclusiveness and transparency of intergovernmental and public consultations".

5.2. Decarbonisation and environmental policy

Romania adhered to the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, with a view to ensuring that high-risk waste is managed in an environmentally sound manner. Additionally, in the context of Romania's membership to the European Union, the country has adopted the EU Regulation 1257/2013 on ship recycling, along with its amendments.

Romania is an active member of the International Maritime Organisation (IMO), and participates in five Committees: the Maritime Safety Committee (MSC), the Marine Environment Protection Committee (MEPC), the Legal Committee (LEG), the Technical Cooperation Committee (TC), and the Facilitation Committee (FAL), as well as the following subcommittees: Sub-Committee on Navigation, Communications and Search and Rescue (NCSR), Sub-Committee on Human Element, Training and Watchkeeping (HTW), Sub-Committee on Pollution Prevention and Response (PPR), Sub-Committee on Implementation of IMO Instruments (Code III), and Sub-Committee on Ship Systems and Equipment (SSE).

At national level, Romania has implemented IMO's International Convention for the Prevention of Pollution from Ships (MARPOL) Annex VI through orders No. 999/2022 and No. 846/2023. This Annex enforces ships to determine their Energy Efficiency Existing Ship Index (EEXI) and report on their annual operational carbon intensity indicators (CII) and CII ratings.

The Romanian government is taking further steps to implement the International Convention for the Prevention of Pollution from Ships (MARPOL) Annex VI. As a part of this effort, the government is promoting and drafting a set of methodological steps that are set to come into force soon.

Regarding the Ballast Water Management Convention (BWM), the Romanian government suggests conducting an impact study to evaluate the potential outcomes of implementing the Convention at a national level, as adhering to the Convention will require to implement structural policy and organisational adjustments.

Likewise, the Romanian government considers that there is a need to analyse the impact that fulfilling the goals of the BWM on the protection of the marine environment would have on Romanian industry. This is because there is currently no concerted policy or simultaneous accession to the BWM by all the Black Sea Littoral States. Furthermore, some of the invasive species have formed a balanced new biotope and may have an economic potential worth exploring.

Finally, in addition to Romania's implementation of international maritime and environmental policies as well as its involvement in international fora, it is important to note that efforts have been made by agents in the private sector. For instance, the Damen Group, owner of Damen shipyard Galati, has set the objective of becoming the world's leading sustainable shipbuilder and has started constructing hybrid and fully electric vessels. The potential realisation of Damen's goals for industry transition foresees a promising outlook toward the decarbonisation of the shipbuilding industry in Romania.

5.3. Social and labour policy

Romania does not have social or labour policies that specifically target employees working in the shipbuilding sector, but the sector is impacted by wider regulation and policies on labour and workers' rights.

In Romania, institutionalised collective bargaining and the right of workers to organize themselves are protected by legislation, including in the shipbuilding industry.

The Romanian Shipbuilders Association (ANCONAV) represents the interests of shipyards and manufacturers, distributors of equipment, and raw materials from Romania on a national and international level. ANCONAV is a member of the European association SEA EUROPE, which represents the European shipbuilding industry in 15 nations.

There are various unions that operate within ANCONAV: i) The Mangalia Navalist Free Trade Union, affiliated to the Federation IndustriALL, ii) The National Trade Union Bloc, representative trade union of the Mangalia shipyard, iii) the Constanța Shipyard Trade Union, affiliated to the Federation of Free Trade Unions in Romania and to the National Bank of Romania, and iv) The Free Trade Union of Naval Workers Vard Tulcea and Brăila, affiliated to the Federation of Trade Unions in Car Construction Infrațierea (member of the Confederation of Democratic Trade Unions in Romania).

A gender approach has been mainstreamed across Romania's government policies and practices. However, there are no specific gender-sensitive policies and practices that are currently being designed or implemented within the shipbuilding industry.

Romania has implemented the EU Directives on public procurement to ensure contractors receive equal and non-discriminatory treatment.

5.4. International cooperation and partnerships

Romania has expressed a strong interest in engaging in international dialogue, exchanging best practices, policy learning and collaborating with shipbuilding economies worldwide, international organisations, stakeholders, and government partners at a domestic level. The Romanian Competition Council (RCC) is an independent and autonomous entity that operates separately from the Executive and Legislative branches of the Romanian government. It has a compliance programme that promotes fair conduct among private and public stakeholders. This programme aims to prevent, detect, and apply corrective measures against hardcore cartels. Directive (EU) no. 1/2019 has equipped the RCC with additional cooperation tools for investigations related to anticompetitive agreements or practices affecting EU trade. This aligns with the OECD best practices on formal exchange of information between competition authorities in in-depth cartel investigations.

As previously mentioned, Romania actively participates in international and multilateral fora, including being an active member of the International Maritime Organisation (IMO). The country is involved in five of the IMO's Committees, multiple sub-committees, and has adhered to the Organisation's main Conventions related to the safety of navigation and prevention of pollution by ships.

Likewise, Romania has developed strong relationships with other countries and international organisations. Within the framework of the Integrated Technical Cooperation Programme (ITCP), Romania has organised meetings and seminars, including events such as the Regional Seminar on Anti-Vegetative Systems, International conferences on "Search and Rescue - SAR in the Black Sea Region", the 8th International Black Sea Conference on "Search and Rescue - SAR", the Regional Training Course on Search and Rescue (SAR) Coordination for the Black Sea Neighbouring States, and meetings of the Black Sea Port State Control Committee.

6. Conclusion

Romania has a **longstanding tradition in shipbuilding**, with major shipyards like Damen Shipyards Galati, Damen Shipyards Mangalia, Vard Braila, Vard Tulcea and Santierul Naval Constanta producing a range of vessels from tugboats to barges. Positioned strategically along the Black Sea and the Danube River, the country has established itself as a significant marine commerce centre in Europe. Especially in the Southeast region, the shipbuilding industry remains pivotal, significantly contributing to employment and the regional economy.

Romania is one of the EU's principal manufacturers of containerships, bulkers, tankers, tugs and dredgers. Its contribution to both global and EU's ship completions has seen a **marked a decline in the last seven years** from its earlier dominance between 2012 and 2017.

The shipbuilding industry in Romania faces several challenges. As a consequence of Russia's war on Ukraine, Romanian shipbuilders have witnessed a notable **surge in input prices**, especially for steel. Another concern for Romania's shipbuilding sector is labour shortages, heightened by national depopulation due to strong emigration patterns. Despite specialised shipbuilding courses in local institutions and vocational programmes, the sector **struggles to attract and retain talent**, leading local shipyards to rely increasingly on foreign labour.

Furthermore, R&D intensity in Romania is the lowest in the EU, and its shipbuilding industry is confronted with **productivity challenges**, prolonged build times, and technological gaps. External factors like COVID-19 disruptions and a shifting workforce further strain the sector, while governance and collaboration opportunities remain untapped. In addition, international maritime regulations, particularly those related to environmental concerns, affect the types and standards of ships produced and broader shipbuilding practices.

To tackle these challenges, Romania's shipbuilding sector could benefit from a **targeted shipbuilding strategy** to reach its full potential. While Romania adheres to broader EU directives, policies and agreements for industry, government initiatives lack a well-defined and comprehensive set of industrial and structural policies aimed specifically at the shipbuilding sector. The country also does not have a targeted social or labour policy for employees in the shipbuilding sector.

Romania could profit from developing networks, both in Romania and with companies in the EU, and fostering partnerships between shipyards, academic institutions and research centres as way improve efficiency in Romanian firms and have easier access to finance. This could also help the shipbuilding industry to increase investment in R&D and innovation.

The Romanian shipbuilding industry could also leverage environmental regulations to its benefit by engaging in the **construction of eco-friendly vessels**. This would allow the sector to further diversify its portfolio, emphasising advanced technology and less carbon intensive ships.

References

- Clarksons (2023), *World Fleet Register*, [4]
<https://www.clarksons.net/wfr/#!/login/?returnPath=fleet>.
- Common Maritime Agenda for the Black Sea (2023), *About CMA*, <https://black-sea-maritime-agenda.ec.europa.eu/about/our-mission>. [9]
- Cristea, M. (2021), “BR Business Review where Romania Talks Business”, *Vard Braila and Vard Tulcea shipyards will merge to become one company*, <https://business-review.eu/news/vard-braila-and-vard-tulcea-shipyards-will-merge-to-become-one-company-217239> (accessed on 6 October 2023). [29]
- Damen Shipyards Group (2023), *Damen Shipyards Galati*, [26]
<https://www.damen.com/companies/damen-shipyards-galati>.
- Damen Shipyards Group (2023), *Damen Shipyards Mangalia*, [25]
<https://www.damen.com/companies/damen-shipyards-mangalia>.
- Dixon, G. (2022), “Start-up Norwind Offshore inks another two CSOVs at Vard”, *Trade Winds*, [14]
<https://www.tradewindsnews.com/offshore/start-up-norwind-offshore-inks-another-two-csovs-at-vard/2-1-1202152> (accessed on 5 October 2023).
- Dixon, G. (2020), “First unmanned ship project on hold due to pandemic”, *Trade Winds*, [11]
<https://www.tradewindsnews.com/technology/first-unmanned-ship-project-on-hold-due-to-pandemic/2-1-810512> (accessed on 10 October 2023).
- EURES (2023), *Labour Market Information: Romania*, https://eures.ec.europa.eu/living-and-working/labour-market-information/labour-market-information-romania_en#national-level. [6]
- European Commission (2022), *Country Review of the Romanian Research and Innovation System*, <https://ec.europa.eu/research-and-innovation/en/statistics/policy-support-facility/psf-country/psf-country-review-romanian-research-and-innovation-ri-system>. [2]
- European Commission (2020), *The State Aid Temporary Framework*, https://competition-policy.ec.europa.eu/state-aid/coronavirus/temporary-framework_en. [20]
- European Council (2023), *FuelEU maritime initiative: Council adopts new law to decarbonise the maritime sector*, <https://www.consilium.europa.eu/en/press/press-releases/2023/07/25/fueleu-maritime-initiative-council-adopts-new-law-to-decarbonise-the-maritime-sector/#:~:text=10%3A20-.FuelEU%20maritime%20initiative%3A%20Council%20adopts%20new%20law%20to%20decarbonise%20>. [21]
- European Union (2023), *Common Maritime Agenda for the Black Sea*, [https://black-sea-maritime-agenda.ec.europa.eu/#:~:text=The%20Common%20Maritime%20Agenda%20\(CMA\)%20for%20the%20Black%20Sea%20is.Economy%20in%20the%20Black%20Sea](https://black-sea-maritime-agenda.ec.europa.eu/#:~:text=The%20Common%20Maritime%20Agenda%20(CMA)%20for%20the%20Black%20Sea%20is.Economy%20in%20the%20Black%20Sea). [10]

- European Union (2020), *NextGenerationEU*, https://next-generation-eu.europa.eu/index_en. [19]
- ICDPR (2020), *Danube Facts and Figures: ROMANIA*, https://www.icpdr.org/sites/default/files/nodes/documents/romania_fact_and_figures.pdf. [5]
- OECD (2022), *OECD Economic Surveys: Romania*, <https://www.oecd-ilibrary.org/docserver/e2174606-en.pdf?expires=1696317272&id=id&accname=ocid84004878&checksum=F519EA74ADCDF9685C3A2F921A191A78>. [1]
- SANTIERUL NAVAL CONSTANTA S.A. (2023), *Company Profile*, <http://www.snc.ro/27/about-snc/static.html>. [27]
- SANTIERUL NAVAL ORSOVA (2023), *Company*, <https://www.snorsova.ro/en-gb/company/>. [28]
- Schmidt, V. and M. Dan (2008), *OECD*, <https://www.oecd.org/industry/ind/41823700.pdf>. [17]
- Severnav (2023), *SEVERNAV SHIPYARD DROBETA TURNU SEVERIN*, <https://www.severnav.ro/>. [24]
- Shipyards ATG Giurgiu S.R.L (2023), *Shipyards ATG Giurgiu S.R.L Home*, <https://shipyardsatg.ro/>. [31]
- Spataru, F. (2015), *Insight on the Romanian Shipbuilding Industry: 2000- 2015*, <https://www.oecd.org/sti/ind/Item%203.5%20ANCONAV%20-%20OCDE%20Romanian%20Shipbuilding%20Industry.pdf>. [7]
- Tan, W. (2017), “Vard to build \$318m electric hybrid cruiseship for Ponant”, *Lloyd’s List*, [https://www.lloydslist.com/LL1120558/Vard-to-build-\\$318m-electric-hybrid-cruiseship-for-Ponant](https://www.lloydslist.com/LL1120558/Vard-to-build-$318m-electric-hybrid-cruiseship-for-Ponant) (accessed on 7 October 2023). [12]
- Tan, W. (2017), “Vard wins newbuilding deal from Aker BioMarine”, *Lloyd’s List*, <https://www.lloydslist.com/LL025578/Vard-wins-newbuilding-deal-from-Aker-BioMarine> (accessed on 10 October 2023). [15]
- TradeWinds (2018), *TradeWinds*, <https://www.tradewindsnews.com/romanian-yard-brings-in-130-vietnamese-workers/2-1-436825>. [8]
- UNCTAD (2022), *The war in Ukraine and its effects on maritime trade logistics*, https://unctad.org/system/files/official-document/osginf2022d2_en.pdf (accessed on 2 May 2023). [30]
- Vard AS (2023), *Vard Braila*, <https://www.vard.com/location/romania/vard-braila>. [23]
- Vard AS (2023), *Vard Tulcea*, <https://www.vard.com/location/romania/vard-tulcea>. [22]
- Wainwright, D. (2021), “Damen-built Australian icebreaker heads for new home in Hobart”, *Trade Winds*, <https://www.tradewindsnews.com/offshore/damen-built-australian-icebreaker-heads-for-new-home-in-hobart/2-1-1064755> (accessed on 5 October 2023). [16]

- Willmington, R. (2023), “The week in newbuildings: Vard wins wind farm operations vessels from UK owner”, *Lloyd’s List*, <https://www.loydslist.com/LL1144996/The-week-in-newbuildings-Vard-wins-wind-farm-operations-vessels-from-UK-owner?vid=Maritime&processId=df82d10b-b2ee-4428-afdb-bc7d8dd459c0> (accessed on 9 October 2023). [13]
- World Bank (2023), *Recent Economic Developments*, <https://www.worldbank.org/en/country/romania/overview#3>. [3]
- World Trade Organization (1996), *World Trade Organization: Ministerial Conference. Singapore Ministerial Declaration.*, https://www.wto.org/english/news_e/pres96_e/wtodec.htm. [18]
- Zoom Info (2023), *Who is Santierul Naval Constanta S.A.*, <https://www.zoominfo.com/c/santierul-naval-constant-sa/372151239>. [33]
- Zoom Info (2023), *Who is Shipyard ATG Giurgiu*, <https://www.zoominfo.com/c/shipyard-atg-giurgiu-srl/372809341>. [32]

ANNEX: Peer Review Mission Programme

OECD Field missions – Steel and Shipbuilding Committee, 16-20 October 2023			
<i>Locations: Romanian Ministry of Economy, Entrepreneurship and Tourism HQ Bucharest City of Galați</i>			
Time	Topics	Stakeholders	Participants
Monday, 16-Oct-2023			
10:00-10:25	<p style="text-align: center;">Opening session</p> <p style="text-align: center;">Welcome address and administrative details of the mission</p> <p style="text-align: center;">Status of the general process</p> <p style="text-align: center;">Mission details</p>	<p style="text-align: center;">National Focal Point, Steel Committee and Working Party on Shipbuilding – Shipbuilding Committee/Ministry of Economy, Entrepreneurship and Tourism</p> <p style="text-align: center;">National Coordination Team for the OECD Accession/Ministry of Foreign Affairs</p> <p style="text-align: center;">OECD Secretariat</p>	<p style="text-align: center;">Ștefan-Radu Oprea, Minister of Economy, Entrepreneurship and Tourism</p> <p style="text-align: center;">Luca Niculescu, National Coordinator for the OECD Accession, State Secretary, Ministry of Foreign Affairs</p> <p style="text-align: center;">STI experts</p>
5 minutes break			
10:30-11:15	Discussion regarding the statistical aspects involving the steel and shipbuilding sectors	National Institute of Statistics	<p style="text-align: center;">Virginia BALEA, Deputy Director</p> <p style="text-align: center;">Cristina BURAVIC, Senior Expert</p>
5 minutes break			
11:20 - 12:00	Environment aspects regarding the steel and shipbuilding sectors	Ministry of Environment, Waters and Forests	<p style="text-align: center;">Gherghița Nicodim, Head of the Climate Strategies and Reporting Service</p> <p style="text-align: center;">Gheorghe Constantin, Director General, Directorate-General for Water</p> <p style="text-align: center;">Elena Mehedințu, Head of the Industrial Emissions Service</p>

			Mihaela Olaru, Head of the Waste Division, Directorate General Waste, Hazardous Chemicals, Soil and Subsoil
			Ciprian Șoavă, Head of Authorisation and Impact Assessment Service, National Environmental Protection Agency
15 minutes break			
12:15– 13:00	Labour and other social aspects regarding the two sectors including vocational training and educational programmes	Ministry of Labour and Social Protection Ministry of Education Ministry of Family, Youth and Equal Opportunities	Georgeta PELCEA, Senior Expert, Directorate for Employment Policies, Angelica SABIESCU, Counsellor, Social Dialogue Directorate Gheorghe IVAN, Counsellor, Directorate for Salary Policies Paul NICOLESCU, Counsellor, Directorate for Wage Policies Cristina OLTEANU, Counsellor, Directorate-General for University Education Florin POPA, Counsellor, Directorate-General for University Education Camelia GHEȚU, Inspector, National Centre for Vocational and Technical Education Development Gianina DIMITRESCU, Counsellor
13:00 – 14:30	Lunch Break		
14:30 - 16:00	Competition/Financial/Consumer protection aspects	Romanian Competition Council	Raluca PÂRLOG, Competition Inspector Bușega IONUȚ, Competition Inspector

		Eximbank	Radu Păun, Head of the Energy and Industry Division Șerban GHINESCU, Executive Director, Financing, Guarantees and Insurance Division
			Corina VULPEȘ Institutional Relations Director, Financing, Guarantees and Insurance Division
Tuesday, 17-Oct-2023			
9:30 - 10:15	Discussion regarding aspects that concern the Shipbuilding Committee/Steel	Ministry of Transport and Infrastructure Ministry of Economy, Entrepreneurship and Tourism	
15 minutes break			
10:30 - 11:15	Trade/Investment/Public procurement aspects concerning the two sectors	Ministry of Economy, Entrepreneurship and Tourism Ministry of Research and Innovation Romanian Agency for Investment and Foreign Trade National Agency for Public Procurement	Miruna POPESCU, Counsellor Eugenia MARIN, Senior Counsellor Andrei BABADAC, Counsellor, Foreign Investments Directorate Marc TRIPON, Counsellor Andreea VLĂSCLEANU, Deputy Director Raluca MARȚIAN, Head of Unit
15 minutes break			
11:30 - 12:00	Measures meant to combat the energy crisis affecting the industry	Ministry of Energy	Robert STĂNESCU, Counsellor, European Affairs and International Relations Directorate Alexandra TUNȘANU, Counsellor, European Affairs and International Relations Directorate

15 minutes break			
12:15-13:15	Government transparency and integrity	General Secretariat of the Government Ministry of Justice National Integrity Agency	Robert SABOTICI Counsellor Robert LĂZĂROIU Counsellor Răzvan BOȘTINARU, Legal specialized personnel assimilated to judges and prosecutors
			Daniel Ștefan BELINGHER, Head of Unit, Structural Funds Implementation, Studies and Strategies Service
Wednesday, 18-Oct-2023			
10:00 - 12:00	OECD/Industry discussions	Industry associations and companies Union of Romanian Steel Producers (UniRomSider) The Romanian Shipbuilders Association (ANCONAV)	Aida Crăița NECHIFOR – President, UniRomSider Adrian MĂRGĂRIT - Director - Head of Strategic Projects, Liberty Galați Adrian POPESCU - Chairman of the Board of Directors, Artrom Steel Tubes Mihaela POPESCU – President, TenarisSilcotub Raluca ASANACHE – Institutional Relations Manager, TenarisSilcotub Monica DRIJMAN – Energy Manager, ArcelorMittal Hunedoara Marian NEGRAIA - CEO, ArcelorMittal Tubular Products Roman Carlo BELTRAME – CEO, Donalam SRL AFV Beltrame Group Petru IANC – Executive Director, UniTub

			<p>Florian PĂTRUȚESCU – Executive Director, UniRomSider</p> <p>Gelu STAN – Executive Director, ANCONAV</p> <p>Doru GAIBAR – General Manager, Damen</p>
			<p>Shipyards Galați</p> <p>Radu RUSEN, Director, Constanța Shipyard</p> <p>.... Vard Brăila confirmed</p>
Lunch Break			
13:15 - 15:00	OECD/Industry discussions	<p>Industry associations and companies</p> <p>Union of Romanian Steel Producers (UniRomSider)</p> <p>The Romanian Shipbuilders Association (ANCONAV)</p>	
15:30 – 18:30	Travel to Galați		
Thursday, 19-Oct-2023			
09:00 - 11:30	<p>Visit to Liberty Steel Galați</p> <p>OECD/Industry discussions</p>	Liberty Steel Galați	
Lunch Break			
13:00 - 15:30	<p>Visit to Damen Shipyards Galați</p> <p>OECD/Industry discussions</p>	Damen Shipyards Galați	
16:00 – 17:00	<p>Visit to Galați City Hall</p> <p>OECD/Local authorities discussions</p>	Galați City Hall	
Friday, 20-Oct-2023			

<p>9:30-10:15</p>	<p>Closing session (Wrap-up)</p>	<p>National Focal Point, Steel Committee and Working Party on Shipbuilding – Shipbuilding Committee/Ministry of Economy, Entrepreneurship and Tourism</p> <p>National Coordination Team for the OECD Accession/Ministry of Foreign Affairs</p> <p>OECD Secretariat</p>	
--------------------------	----------------------------------	--	--