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SIGNIFICANCE OF THE ENTRY INTO FORCE OF THE *HONG KONG CONVENTION* FOR IMPROVING THE ENVIRONMENTAL ASPECTS OF SHIP RECYCLING

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Abstract. This paper analyzes the provisions of the *Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships, 2009*, as the key international instrument aimed at regulating the safe and environmentally sound recycling of ships. Ship recycling is concentrated in a few Asian countries, which are characterized by very low labor costs and extremely low safety and environmental standards. In the facilities in these countries ship recycling is carried out using rudimentary technology that requires a lot of manual labor and limited capital resources, resulting in a very high environmental impact. Therefore, there was an urgent need for international regulation to ensure that ship recycling is carried out in an environmentally sound manner in facilities that are equipped with modern technology and employing qualified workers. The *Hong Kong Convention* was adopted by the International Maritime Organization in 2009 and entered into force in June 2025. The reason for its entry into force a full sixteen years after its adoption is due to the significantly stricter requirements compared to other International Maritime Organization conventions, which aim to ensure the greatest possible actual impact and general acceptance of the *Hong Kong Convention*. This paper compares the *Hong Kong Convention* with the *EU Ship Recycling Regulation* (EU 1257/2013), highlighting both similarities and differences in terms of the requirements for safe and environmentally sound ship recycling. Particular attention is paid to identifying the main challenges in implementing the *Convention*, including economic factors and working conditions in recycling facilities. The paper also considers how the *Hong Kong Convention* will be implemented into Croatian legislation. Finally, *de lege ferenda* solutions for the further improvement of the ship recycling process are proposed, emphasizing the importance of international cooperation, the introduction of advanced technologies in recycling facilities and increasing the number of qualified workers and their adequate protection of labor rights.

Keywords: *Hong Kong Convention*; *EU Ship Recycling Regulation*; Ship Recycling; Environmental Protection.

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1. INTRODUCTION

The rapid technological and economic development of the last 30 years has led to considerable environmental pollution worldwide. As a result, environmental and safety aspects of sustainable development have increasingly become an imperative to be integrated into any high-risk system. One of the industries with high ecological risk is ship dismantling or recycling of end-of-life ships (Milošević Pujo, Jurjević & Domijan Arneri, 2007).

The disposal of ships at the end of their operational lives is of great importance for the continuous renewal of the merchant fleet. The value of decommissioned ships lies in the materials from which they are built, as almost all of them can be reused. For example, steel can be recycled into materials for various constructions or often into container connections. It is important to point out that steel production from recycled material requires only a third of the energy needed to produce steel from raw materials.

If there is no proper integrated system for the recycling or reuse of ship steel, machinery, auxiliary equipment and even furniture, these materials will remain unused and economically worthless at the end of a ship's life cycle. In this respect, ship recycling facilities contribute to sustainable development and represent an environmentally friendly method of ship disposal as well as an economic integration of their life cycle (Mikelis, 2006).

Considering the overcapacity of the transport sector, the average age of the world fleet (the operational life of most merchant ships is 20–25 years) and the phasing out of single-hull tankers to increase maritime safety and protect the marine environment, it is obvious that the number of ships that need to be scrapped and recycled will increase (Primorac, 2015).

Although ship recycling is undoubtedly the most environmentally friendly method of disposing of ships at the end of their life cycle, problems arise when this recycling takes place on beaches or in recycling facilities in developing countries that apply low safety and environmental standards. The cost of ship recycling in the European Union (hereinafter: EU) and the United States (hereinafter: US) is significantly higher than in Asia, mainly due to strict environmental, health and safety regulations for workers. As recycling facilities in the EU and the US are not economically viable, the ship recycling industry has long since relocated and concentrated on a very small number of countries: India, Pakistan, Bangladesh, China and Turkey (Mikelis, 2011).[1] The reasons for these countries taking over this industry are essentially similar: they are developing countries with cheap labor, a great need for jobs and limited capacity for large investments; they are able to recycle much of the steel from ships and use it for various constructions; they have developed markets for used marine equipment and appliances; and in all these countries, safety, environmental and social standards are extremely low.[2]

The benefits of ship recycling in these countries only accrue to individuals who, taking advantage of cheap labor, use primitive technological methods of beaching ships and cutting uncleaned ship structures while they are still afloat, applying low safety and environmental standards, thus directly endangering global safety and environmental protection (Primorac, 2015). In addition, workers in ship recycling facilities are constantly exposed to the risk of occupational accidents due to the risks associated with ship dismantling. In the South Asian countries mentioned above, most workers wear virtually no protective equipment such as helmets, masks or goggles, and there are no warning signs. Most workers are neither trained in the operation of cutting torches nor in the handling of hazardous materials used in ship recycling (Chang, Wang & Durak, 2010).

For all these reasons, there was an obvious need for a comprehensive multilateral international regulation covering all aspects of environmentally sound and safe ship recycling and imposing certain obligations on ship owners, flag states and states where ship recycling facilities are located. This finally happened in Hong Kong in 2009, when the *Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships* (hereinafter: Hong Kong Convention) was adopted under the auspices of the International Maritime Organization (hereinafter: IMO) (Official Gazette, International Convention for the Safe and Environmentally Sound Recycling of Ships, 2009), the global institution setting standards for safety, protection, and environmental impact of international maritime transport.

[1] In these five countries, a total of 97% of the world's gross tonnage of ships is recycled.

[2] It should be noted, however, that China and Turkey have recently invested significant resources in their recycling facilities, so ship recycling in these two countries is currently at a higher technological level compared to the other three mentioned countries.

2. THE HONG KONG INTERNATIONAL CONVENTION FOR THE SAFE AND ENVIRONMENTALLY SOUND RECYCLING OF SHIPS

The environmental impact of ship recycling facilities has been an issue since the 1980s. The first significant attempt to regulate such facilities was the *Basel Convention on the Control of Transboundary Movements of Hazardous Waste and their Disposal* (hereinafter: Basel Convention), adopted in 1989.[3] However, the *Basel Convention* was not sufficient to address all the risks and issues associated with ship recycling. *The Convention* only superficially addresses the transport of hazardous materials and does not contain detailed rules for the recycling process itself. Furthermore, the *Basel Convention* has not entered into force at the international level. Therefore, the International Maritime Organization (IMO) has put ship recycling and its environmental impact on its agenda.

The Marine Environment Protection Committee (hereinafter: MEPC) plays a particularly important role in the prevention of marine pollution. As the IMO committee responsible for the control and prevention of discharges of pollutants from ships into the environment, the MEPC has taken a wide range of measures to prevent marine pollution over the years (Slišković, Petrinović, Mandić & Vuković, 2023). Since 2003, it has issued guidelines aimed at achieving a green ship recycling industry.[4] In addition, joint efforts involving the IMO, the International Labour Organization (hereinafter: ILO), and the Conference of Parties to the *Basel Convention* led to the establishment of a Joint Working Group on Ship Scrapping.

The Joint Working Group on Ship Scrapping drafted the *Hong Kong Convention*, which was finally adopted at a diplomatic conference held in Hong Kong in May 2009, with delegates from 63 countries participating (Chang, Wang & Durak, 2010).

The *Hong Kong Convention* covers all aspects of environmental protection and safety related to ship recycling and sets out the responsibilities and obligations of all parties involved — ship owners, shipyards, recycling facilities, flag states, port states and states where recycling is carried out — with the aim of responsible management and disposal of waste streams in a safe and environmentally sound manner (Slišković, Petrinović, Mandić & Vuković, 2023).

The provisions of the *Hong Kong Convention* relate to the design, construction, operation, and preparation of ships to enable safe and environmentally sound recycling, as well as to the establishment of an appropriate ship recycling oversight mechanism, including certification and reporting requirements. The objective of the *Hong Kong Convention* is to ensure that ships, once recycled, do not pose unnecessary risks to human health and the environment (Tsimplis, 2010).

The IMO set very strict conditions for the entry into force of this convention. It was stipulated that the *Hong Kong Convention* would enter into force if it was ratified by at least 15 states whose merchant fleets account for at least 40% of the world's gross tonnage, provided that the highest annual ship recycling rate in these states in the previous ten years was at least 3% of their total gross tonnage (Petrinović & Mandić, 2025). These conditions were met in June 2023 and the *Hong Kong Convention* entered into force 24 months later, on 26 June 2025. To date, 24 countries have ratified the *Convention*, including the Republic of Croatia (hereinafter: Croatia), which together represent around 46% of global tonnage and 3.31% of the recycling capacity required in the last ten years.[5]

The *Hong Kong Convention* contains a total of 21 articles regulating the general obligations of the member states, definitions related to the recycling process (*Hong Kong Convention*, 2009, Art. 1, para. 1, pt. 10),[6] the scope of application, ship recycling oversight, ship surveys and certification, authorization of recycling facilities, information exchange among member states, inspection of ships intended for

[3] The text of *The Basel Convention on the Control of Transboundary Movements of Hazardous Waste and their Disposal*, 1989, is available through: https://eur-lex.europa.eu/legal-content/HR/ALL/?uri=legissum:l28043

[4] The most well-known guideline is the *IMO Guidelines on Ship Recycling*, which were adopted at the 23rd regular session of the Assembly by Resolution A.962 (23) on December 5, 2003.

[5] The Member States of the *Hong Kong Convention* are Bangladesh, Belgium, Republic of the Congo, Croatia, Denmark, Estonia, France, Germany, Ghana, India, Japan, Liberia, Luxembourg, Malta, Marshall Islands, Kingdom of the Netherlands, Norway, Pakistan, Panama, Portugal, São Tomé and Príncipe, Serbia, Spain, and Türkiye. Among the five most important countries where the majority of the world's ship recycling takes place, only China has not ratified the *Convention*. https://www.imo.org/en/MediaCentre/HotTopics/Pages/Recycling-of-ships-and-Hong-Kong-Convention.aspx (accessed: May 15, 2025.)

[6] Ship recycling means the complete or partial dismantling of a ship in a ship recycling facility in order to recover its components and materials for processing or reuse, while managing hazardous and other materials. It also includes related activities such as the storage and processing of components and materials within the facility, but does not include their further processing or disposal in separate facilities.

recycling, dispute resolution provisions, etc. The *Convention* contains four annexes[7] supplemented by seven appendices.[8]

According to Article 3.1 of the *Convention*, it explicitly applies to ships (*Hong Kong Convention*, Art. 2, para. 1, pt. 7)[9] entitled to fly the flag of a member state and to ship recycling facilities (Hong Kong Convention, Art. 2, para. 1, pt. 11)[10] operating under the jurisdiction of a member state (*Hong Kong Convention*, Art. 3, para. 1).

It is important to note that the *Hong Kong Convention* does not apply to warships, auxiliary vessels, or other ships owned or operated by a member state that are used exclusively for non-commercial governmental purposes (*Hong Kong Convention*, Art. 3, para. 2). It also does not apply to ships with a gross tonnage of less than 500 (Tsimplis, 2009),[11] nor does it apply to ships that operate exclusively in waters under the sovereignty or jurisdiction of their flag state during their entire period of operation (*Hong Kong International Convention*, 2009, Art. 3, para. 3). In addition, states with two or more territorial units may apply the *Convention* to all or only some of their territorial units (*Hong Kong International Convention*, 2009, Art. 16, para. 4).[12]

Under the provisions of the *Hong Kong Convention*, shipowners are obliged to sell end-of-life ships only to recycling facilities that meet IMO standards and are authorized by both the flag state and the recycling state (Milošević Pujo & Jurjević, 2011). Furthermore, shipowners must ensure that each ship carries *an Inventory of Hazardous Materials* (IHM), which is customized for each ship and certified in accordance with IMO guidelines (*Hong Kong Convention*, 2009, Art. 5).[13]

Ship recycling facilities must obtain appropriate authorization and prepare a *Ship Recycling Facility Plan* that includes worker safety and training; protection of human health and the environment; duties and responsibilities of personnel; emergency preparedness and response; monitoring systems; reporting and record-keeping, all in accordance with IMO guidelines. Before a ship can be recycled, the recycling facility must prepare a *Ship Recycling Plan* tailored to each individual ship. This plan must define the recycling method depending on the specific ship's characteristics and the list of hazardous materials present. Member state governments are required to ensure that recycling facilities under their jurisdiction comply with the requirements of the *Hong Kong Convention* (Hong Kong Convention, 2009, Regulation 9).

The IMO has committed to assisting member states in improving environmental and safety standards in the ship recycling industry, in accordance with the requirements of the *Hong Kong Convention*. Since the adoption of the *Hong Kong Convention*, MEPC has developed and adopted five sets of guidelines required by the Convention. These are: *the 2011 Guidelines for the Development of the Ship Recycling Plan*; *the 2012 Guidelines for Safe and Environmentally Sound Ship Recycling*; *the 2012 Guidelines for the Authorization of Ship Recycling Facilities*; *the 2012 Guidelines for the Survey and Certification of Ships under the Hong Kong Convention*; *the 2012 Guidelines for the Inspection of Ships under the Hong Kong Convention*; and *the 2023 Guidelines for the Development of the Inventory of Hazardous Materials*.[14]

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7 General Provisions (Regulations 1–3); Ship Requirements (Regulations 4–14); Requirements for Ship Recycling Facilities (Regulations 15–23); Reporting System (Regulation 24).

8 The first annex relates to the control of hazardous materials (definitions, control measures); the second annex concerns the minimum list of items for the Inventory of Hazardous Materials; the third annex contains forms for the International Inventory Certificate of Hazardous Materials and the associated authorizations; the fourth annex includes forms for the "*Ready for Recycling*" certificate and its validity extension; the fifth annex contains forms for the authorization of ship recycling facilities; the sixth annex relates to forms for the notification of the planned start of recycling; and the seventh annex contains the form for the declaration of completed ship recycling.

9 For the purposes of the provisions of Article 2, paragraph 1, point 7 of the *Hong Kong Convention*, a ship is defined as a vessel of any type that navigates or is capable of navigating in the marine environment and includes submarines, floating objects, floating platforms, self-elevating platforms, floating storage units (FSUs), and floating production and offloading units (FPSOs), as well as vessels without equipment or those that are towed.

10 A ship recycling facility is defined as a designated area used as a site, yard or facility for ship recycling.

11 The *Hong Kong Convention* applies only to ships of 500 gross tonnage (GT) or more. It does not apply to smaller vessels such as yachts, motorboats, inflatable boats, windsurfing boards, or jet skis.

12 In this way, China, as a key country in the ship recycling industry, has been enabled to determine the scope of application of the *Convention* within its special administrative regions.

13 After the initial verification of the *Inventory of Hazardous Materials*, ships will be required to undergo additional inspections throughout their operational life, as well as a final inspection prior to the recycling process.

14 These guidelines cover: Development of the Ship Recycling Plan; Development of the Inventory of Hazardous Materials; Safe and environmentally sound ship recycling; Survey and certification of ships; Inspection of ships and Authorization of ship recycling facilities and Development of the Inventory of Hazardous Materials.

A notable example of IMO assistance to member states is the *Safe and Environmentally Sound Ship Recycling project* in Bangladesh (hereinafter: SENSREC project). This project is funded by Norway and implemented by the IMO in several phases. The SENSREC project has helped Bangladesh to improve its ship recycling standards, which has greatly facilitated its accession to the *Hong Kong Convention*.[15]

3. LEGAL FRAMEWORK FOR SAFE AND ENVIRONMENTALLY SOUND SHIP RECYCLING IN THE EUROPEAN UNION

The EU has adopted several regulations relating to the safe and environmentally sound recycling of ships, the provisions of which are fully binding and directly applicable in all its Member States. The most important of these regulations are *Council Decision requiring Member States to ratify or to accede to the Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships, 2009, in the interests of the European Union 2014/241/EU* of 14 April 2014 (hereinafter: *EU Council Decision 2014/241*),[16] and *Regulation (EU) No 1257/2013 of the European Parliament and of the Council of 20 November 2013 on ship recycling and amending Regulation (EC) No 1013/2006 and Directive 2009/16/EC* (hereinafter: *EU Ship Recycling Regulation*) of 10 December 2013.[17] With *EU Council Decision 2014/241*, the European Union authorized its Member States to ratify the *Hong Kong Convention* in its interest. This Decision is very important as it contributed to the faster ratification and entry into force of the *Hong Kong Convention*.

The *EU Ship Recycling Regulation* is the result of the EU's unilateral approach *(Engels, 2013)* to achieving safer and more environmentally sound ship recycling[18] with the aim of preventing and reducing accidents, injuries, and other harmful effects on human health and the environment caused by ship recycling, as well as facilitating the early ratification of the *Hong Kong Convention* and reducing disparities between shipowners in the EU, third countries, and countries of the Organisation for Economic Co-operation and Development (hereinafter: OECD) (Primorac, 2015). Although it entered into force on 31 December 2013, this *Regulation* began to apply only from 31 December 2018. The reason why the *EU Ship Recycling Regulation* began to apply five years after its entry into force lies in the fact that its provisions stipulate that it would begin to apply six months after the date when the combined maximum annual ship recycling output of facilities included in the *European List of ship recycling facilities* (hereinafter: European List) (*EU Ship Recycling Regulation*, Art. 14, para. 3)[19] amounts to not less than 2.5 million light displacement tonnes (hereinafter: LDT) (*EU Ship Recycling Regulation*, Art. 3, para. 1, pt. 24).[20]

The *EU Ship Recycling Regulation* is fully binding and directly applicable in all Member States in relation to ships flying the flag of an EU Member State.[21] In addition to ships flying the flag of an EU Member State, this *Regulation* also applies to ships flying the flag of a third country that call at a port or anchorage of a Member State.[22]

The general requirements for owners of ships flying the flag of an EU Member State are prescribed by

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15 For more information about the *SENSREC project*, see: https://www.imo.org/en/MediaCentre/HotTopics/Pages/Recycling-of-ships-and-Hong-Kong-Convention.aspx (accessed: May 18, 2025).

16 Official Journal European Union, OJ L128/45. Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex:52012PC0120 (accessed: 21. 5. 2025.)

17 Official Journal European Union , L 330, 10/12/2013, p. 1–20. The Regulation was published on 10 December 2013 and entered into force on 30 December 2013. Available at:https://eur-lex.europa.eu/eli/reg/2013/1257/oj/eng (accessed: 21. 5. 2025.)

18 The definition of the recycling process as well as of ships according to the *EU Ship Recycling Regulation* is identical to that in the *Hong Kong Convention*.

19 In accordance with Article 14, paragraph 3 of the *EU Ship Recycling Regulation*, the European List includes ship recycling facilities located within the EU as well as those located in third countries (provided that the facility intends to recycle ships flying the flag of an EU Member State). The establishment and updating of the European List are regulated by Article 2 of the *EU Ship Recycling Regulation*. The European List is published in the Official Journal of the European Union and on the website of the European Commission. Article 16 of the EU Ship Recycling Regulation governs the European List of ship recycling facilities, which is available at: https://eur-lex.europa.eu/resource.html?uri=cellar:93a23be7-eb86-11eb93a801aa75ed71a1.0014.02/DOC_2&format=PDF (accessed: 22. 5. 2025.)

20 LDT is the weight of a ship in tonnes excluding cargo, fuel, lubricating oils in the tanks, ballast water, fresh water, boiler feed water, consumables, passengers and crew and their belongings and represents the sum of the weight of the hull, structure, machinery, ship's equipment and materials.

21 It is interesting to note that although 37% of the world merchant fleet is owned by European shipowners, only 17% of the world merchant fleet flies under the flag of an EU Member State. Data available at: https://www.emsa.europa.eu/eumaritimeprofile/section-2-the-eu-maritime-cluster.html (accessed: 25. 5. 2025.)

22 It is important to note that the *EU Ship Recycling Regulation* does not apply to the same categories of ships as established under the *Hong Kong Convention*.

Article 6 of the *EU Ship Recycling Regulation*. According to this Article, shipowners are obliged, when preparing ships for recycling, to: provide the operator of the ship recycling facility with all information relevant to the ship and which are necessary for the preparation of the *Ship Recycling Plan* (*EU Ship Recycling Regulation*, Art. 3., para 1., pt. 16.)[23]; notify the relevant authority (*EU Ship Recycling Regulation*, Art. 3., para 1., pt. 9.)[24] in writing and within the prescribed time limit of the intention to recycle the ship at a specific ship recycling facility or facilities (*EU Ship Recycling Regulation*, Art. 6., para 1.).

Furthermore, shipowners are required to ensure that ships are recycled only at ship recycling facilities included in the European List (*EU Ship Recycling Regulation*, Art. 6., para 2.). After the competent authority[25] approves the ship recycling plan in accordance with the requirements of the state in which the ship recycling facility is located, ships must have a *Ready for Recycling Certificate* (EU Ship Recycling Regulation, Art. 7., para 3.). It is important to note that the shipowner remains responsible for the ship and its compliance with the requirements of the relevant authority of the flag state until the operator of the ship recycling facility assumes responsibility for the ship (Primorac, 2015; Mikelis, 2019).

The requirements that must be met by ships flying the flag of a non-EU country and calling at a port or anchorage of a Member State are prescribed by Article 12 of the *EU Ship Recycling Regulation*. For these ships, it is most important to note that, by 31 December 2020, they were required to prepare an *Inventory of Hazardous Materials*. If, after this date, ships flying the flag of a non-EU country do not possess an *Inventory of Hazardous Materials*, the Member State in whose port such a ship calls has the right to deny that ship the right to enter the port or to order it to leave the port (EU Ship Recycling Regulation, Art. 12., para 5.).

3.1. Comparison of the EU Ship Recycling Regulation with Hong Kong Convention

The *EU Ship Recycling Regulation* entered into force before the *Hong Kong Convention*, which meant that the provisions of the *Hong Kong Convention* began to be applied in EU Member States even before its official entry into force. The reason for this lies in the fact that, since the beginning of the 21st century, the EU has paid special attention to environmental protection and sustainable development.

Furthermore, with this *Regulation*, he EU has encouraged its Member States to ratify *the Hong Kong Convention* as soon as possible and thus contribute to its earlier entry into force. As the *EU Ship Recycling Regulation* is based almost entirely on the provisions of the *Hong Kong Convention*, these two instruments provide for practically the same solutions in their respective provisions. They apply to exactly the same types of ships and require the same type of responsibility from shipowners, as well as certification that the ship is ready for environmentally sound recycling. They also impose the same requirements on recycling facilities with regard to their obligations for the environmentally sound recycling of end-of-life ships.[26]

However, there are also some differences between these two instruments. First and foremost, they define ship recycling facilities differently. The *EU Ship Recycling Regulation* defines a ship recycling facility as an area representing a yard or facility located in a Member State or a third country and used for ship recycling (*EU Ship Recycling Regulation*, Art. 3., para. 1., pt. 7.). On the other hand, the definition of a ship recycling facility under the provisions of the Hong Kong Convention is much broader. According to the *Hong Kong Convention*, a ship recycling facility is defined as any area used for ship recycling, which means that even a beach where ships are recycled by beaching and dismantling can be considered as such a facility (the so-called *beaching*) (*Hong Kong Convention*, Art. 2., para 1., pt. 11.).

In addition, it is important to note that the *Hong Kong Convention* does not explicitly define a *Ship Recycling Plan*, although *Regulation 9 of the Annex – Regulations for Safe and Environmentally Sound Recycling of Ships* – regulates in detail the specifics regarding the preparation and content of the *Ship Recycling Plan*.

[23] A Ship Recycling Plan is a plan drawn up by the operator of the ship recycling facility for each individual ship for which it is responsible, taking into account the relevant IMO guidelines and resolutions.

[24] The relevant administration is the national authority to which a Member State assigns responsibility for duties related to ships flying its flag or to ships operating within its jurisdiction.

[25] It is one or more national authorities to which Member States or third countries delegate responsibility for ship recycling facilities in a given geographical area or speciality, with regard to all operations under the jurisdiction of that state.

[26] Precisely because the provisions of these two instruments do not apply to the same types of ships, the solutions contained in their provisions will not contribute to a systematic and comprehensive regulation of environmentally sound ship recycling in the international maritime market.

The *EU Ship Recycling Regulation*, in Article 3, paragraph 1, point 16, clearly defines the Ship Recycling Plan as a plan prepared by the operator of the ship recycling facility for each individual ship for which it is responsible, considering relevant IMO guidelines and resolutions (Primorac, 2015).

A negative aspect of the *EU Ship Recycling Regulation* is that its provisions allow for the possibility of changing a ship's flag to a flag of convenience at the end of the ship's operational life. In this way, the share of the European fleet is reduced, and consequently, the potential European influence in addressing numerous maritime issues. For this reason, it is of particular importance that the *Hong Kong Convention* finally entered into force in June 2025, as this *Convention* regulates safe and environmentally sound ship recycling at the international level, making it impossible to avoid its provisions simply by changing a ship's flag (Kološ, 2010).

At the end, it can be emphasized that both the *Hong Kong Convention* and the *EU Ship Recycling Regulation* contain certain shortcomings in their provisions, such as insufficiently regulated shipowner liability and the acceptance of the beaching method as a safe and environmentally sound method of ship dismantling, which does not allow for fully high-quality and environmentally safe ship recycling. Nevertheless, these two instruments represent a significant step forward for safe and environmentally sound ship recycling both at the EU and international levels.

4. LEGAL FRAMEWORK FOR SAFE AND ENVIRONMENTALLY SOUND SHIP RECYCLING IN THE REPUBLIC OF CROATIA

In the Republic of Croatia, as an EU Member State, the *EU Ship Recycling Regulation* is applied directly. To ensure better understanding and implementation of the *EU Ship Recycling Regulation*, in October 2019 Croatia adopted the *Law on the Implementation of Regulation (EU) No. 1257/2013 of the European Parliament and of the Council of 20 November 2013 on ship recycling and amending Regulation (EC) No. 1013/2006 and Directive 2009/16/EC* (hereinafter: *Law on the Implementation of the EU Ship Recycling Regulation*). The purpose of this *Law* is to establish a national framework for the implementation of the *EU Ship Recycling Regulation* in order to prevent, reduce, or minimize to the greatest extent possible accidents, injuries, and other harmful effects on human health and the environment caused by ship recycling. In addition, the aim of this *Law* is to increase the safety and protection of human health and the marine environment of the EU throughout the ship's life cycle, especially to ensure that hazardous waste generated by such ship recycling is managed in an environmentally sound manner, to establish rules for the proper management of hazardous materials on ships, and to facilitate the ratification of the *Hong Kong Convention*.

Furthermore, this *Law* prescribes the competence of authorities for the implementation of the *Regulation* in Croatia, specifically the administration referred to in Article 3, paragraph 1, point 9 of the *Regulation*, which is the central state administration body responsible for maritime affairs, i.e., the Ministry of the Sea, Transport and Infrastructure (hereinafter: MMPI), responsible for the application of the *Regulation* and this *Law* in the part relating to duties concerning ships flying the Croatian flag or ships operating within Croatian jurisdiction, as well as the recognized organization referred to in Article 3, paragraph 1, point 10 of the *Regulation*, which is the Croatian Register of Shipping. It also determines the competence of the central state administration body responsible for environmental protection, i.e. the Ministry of Environmental Protection and Energy, for issuing permits for ship recycling facilities, maintaining a list of facilities, appointing a contact person and reporting, as well as the competence of the administrative body of a regional self-government unit for receiving notifications of the intention to recycle a ship from a shipowner and issuing approval for a ship recycling plan to a recycling facility, while supervision of the implementation of the *Regulation* is the responsibility of the environmental inspector of the State Inspectorate. (Law on the Implementation of Regulation (EU) No. 1257/2013, Art. 5, para. 9, 2019).

Regarding the ratification of the *Hong Kong Convention*, on 16 February 2021, Croatia submitted its instrument of accession to the IMO, thus becoming the 16th Member State of the *Convention*. This ratification process was preceded by the adoption of the *Law on the Ratification of the Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships, 2009* (hereinafter: *Law on the Ratification of the Hong Kong Convention*). This *Law* was adopted in December 2020 so that its provisions, pursuant to Article 141 of the *Constitution of the Republic of Croatia*, would become part of Croatia's internal legal order. This means that the competent Croatian authorities (MMPI and the Croatian Register of Shipping) will conduct inspections and surveys of ships and issue certificates in accordance with the provisions of the *Convention*. Furthermore, this *Law* aims to ensure the application of the *Convention*, thereby creating a legal framework for the design, construction, operation, and maintenance of ships, primarily by prohibiting materials that must not be

installed on ships, or which may only be used in a limited manner during ship construction. In addition, the *Law* facilitates shipowners' operations by distinguishing between the requirements applicable to existing ships and those applicable to new ships. Moreover, pursuant to Article 16, paragraph 6 of the *Hong Kong Convention*, the *Law* prescribes the obligation to approve the ship recycling plan before such a process begins in an approved recycling facility in the Republic of Croatia.[27]

5. CONCLUSION

The *Hong Kong Convention* was adopted under the auspices of the IMO at the Diplomatic Conference held in Hong Kong in May 2009. Due to the strict conditions imposed by the IMO, the *Convention* did not enter into force until June 2025. This *Convention* marks a new international legal instrument that, in the spirit of environmental protection, human health, and navigational safety, prescribes unified rules for ship recycling. Given that the ship recycling process involves handling materials hazardous to the environment and the health of workers engaged in such activities, the *Convention* seeks to minimize these environmental, health, and safety risks at the international level. Consequently, the *Convention* establishes a legal framework for the recycling of ships flying the flags of its Member States, as well as for the operation of ship recycling facilities under their jurisdiction.

In addition to the IMO, the European Union has also recognized the importance of this issue. This resulted in the adoption of the *EU Ship Recycling Regulation* in 2013, whose primary objective was to facilitate and accelerate the ratification of the *Hong Kong Convention* by EU Member States. The *EU Ship Recycling Regulation* is fully binding and directly applicable in all Member States. It applies to ships flying the flag of an EU Member State and to ships flying the flag of a third country calling at ports or anchorages in the EU.

As an EU Member State, the Republic of Croatia was obliged to implement the provisions of the *EU Ship Recycling Regulation* into its national legislation and to ratify the *Hong Kong Convention*. Croatia fulfilled these obligations by adopting the *Law on the Implementation of the EU Ship Recycling Regulation in October 2019* and the *Law on the Ratification of the Hong Kong Convention in December 2020*. However, we have opinion that these two laws are insufficient. As a *de lege ferenda* recommendation, we propose that the Croatian legislator adopt a subsidiary regulation to more comprehensively regulate and implement the provisions of the *Hong Kong Convention*.

Although the entry into force and implementation of the provisions of the *Hong Kong Convention* has standardized the safe and environmentally sound recycling of ships, the *Convention* has a number of shortcomings. Primarily, it does not mandate a single, compulsory recycling method but leaves this to national regulations, resulting in significant procedural variations between states. We believe that the *Convention* should explicitly prohibit the beaching method, which involves grounding ships on beaches for dismantling—a practice that poses extreme risks to human life and the marine environment. Furthermore, the ship recycling system prescribed by the *Convention* should encompass all phases—before, during, and after recycling. However, the *Convention* regulates only the pre-recycling and recycling phases. Although it addresses waste management after ship dismantling, it does not define how the final waste processing phase should be managed nor explicitly link it to other international environmental protection regimes. Such ambiguities can lead to problems in ship recycling practices.

Additionally, we argue that the *Convention's* scope should be expanded to cover all types of vessels, as limiting its application to certain vessel categories undoubtedly diminishes its effectiveness. Thus, as a *de lege ferenda* solution, we propose extending its application to ships under 500 GT engaged in international navigation. We also advocate for the establishment of a global ship recycling register, which would enable more effective and efficient inspections and surveys in accordance with the *Convention's* provisions.

Workers employed in ship recycling facilities continue to be inadequately protected even after the entry into force of the *Hong Kong Convention*. Therefore, the ILO should become involved by adopting an international convention or at least a recommendation establishing minimum labor protection standards for workers employed in ship recycling.

Despite these shortcomings, the *Hong Kong Convention* represents a significant advancement towards establishing environmentally safe and acceptable ship recycling practices. We are convinced that its entry into force will bring about significant improvements in the protection of the marine environment worldwide.

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[27] It is important to note that there is currently no ship recycling facility in the Republic of Croatia.

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