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Legal Issues in the Law of the Sea and Regulatory Developments.

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Legal Issues in the Law of the Sea and Regulatory Developments

1. Introduction

Law of the Sea is a collection of worldwide laws that govern the rights and obligations of different countries in maritime conditions.¹ The legislation that focuses on the sea, known as shipping or maritime law, focalize its expertise mainly on ‘navigational rights, sea mineral claims and coastal waters jurisdiction’.² Maritime law, admiralty law and the law of the sea are all counterpart with each other. Admiralty law is related to private marine issues, focusing on the carriage of goods by sea, rights to salvage, collisions and marine insurance.³ But what happens where there is a contamination in the sea as a result of a vessel’s neglect or accident.

In the 21st century, continents have come to a point that has joint forces for the common good. The known by many countries law of the sea was mainly obtained from the United Nations Convention on the Law of the Sea⁴ (UNCLOS), also known with the name Law of the Sea treaty. The Law of the Sea Convention, characterises the rights and obligations of countries concerning their utilisation of the world's seas, setting up rules for organisations, the environment, and the administration of marine natural

¹ James Harrison, *Making the Law of the Sea: A Study in the Development of International Law* (2011)

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² James Harrison, *Making the Law of the Sea: A Study in the Development of International Law* (2011)

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³ James Harrison, *Making the Law of the Sea: A Study in the Development of International Law* (2011)

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⁴ 1982

resources.⁵ UNCLOS entered into force in 1994, and now it is accepted by many countries as the ‘constitution of the oceans’.⁶ In 2016 the European Union along with another 167 countries, have joined the Convention. Therefore, it is still unclear and debatable as to whether the Convention ‘codifies customary international law’.⁷

Nowadays, people tend to ignore what it does not bother them. Meaning, that if something is harmful and does not bother an individual, that person will not have any personal reason or benefit to undertake the necessary actions. The human species have been evolved dramatically through the years, especially now where transportation may occur by land, sea and air.⁸ However, these new transportations, have caused environmental damage and no-one took the necessary precautions beforehand until it was too late, and the consequences were too obvious.⁹ Nevertheless, there is still hope for that, if the necessary changes take place, as the environment may heal itself. For that reason, as will be proved below, countries have learned to work with each other,

⁵ North Sea Region, ‘Current legislation relevant to shipping’ <<https://northsearegion.eu/northsee/shipping/current-legislation-relevant-for-shipping/>> accessed 12 June 2019

⁶ Oceans and Law of the Sea - United Nations, ‘The United Nations Convention on the Law of the Sea (a historical perspective)’ (United Nations, 1998)

<https://www.un.org/Depts/los/convention_agreements/convention_historical_perspective.htm> accessed 17 August 2019 ; United Nations Treaty Collection, *Law of the Sea* (December 1982) Volume 2, Chapter 6 – United Nations Convention on the Law of the Sea

⁷ North Sea Region, ‘Current legislation relevant to shipping’ <<https://northsearegion.eu/northsee/shipping/current-legislation-relevant-for-shipping/>> accessed 12 June 2019

⁸ Douglas L. Inman, Charles E. Nordstrom, Reinhard E. Flick, ‘Currents in Submarine Canyons: An air – sea – land interaction’ (1976) *Annual Review of Fluid Mechanics* 8, no 1, 275-310

⁹ William Jack Baumol, Wallace E. Oates, *The Theory of Environmental Policy* (Cambridge University Press, 1988) 1-4

and they are trying to have a united front on that matter. This is where UNCLOS, the law of the sea steps in. The International Maritime Organization¹⁰, the International Whaling Commission¹¹, and the International Seabed Authority¹² are having a big role in the Convention.

Worth mentioning is the International Convention for the Prevention of Pollution from Ships¹³ known as MARPOL which will be explained in-depth in the main body. However, it should be stated in a few words what is the role of MARPOL. MARPOL is an international convention that which was adopted at the International Maritime Organisation in 1973 and ‘contains requirements to prevent pollution that may be caused both accidentally and in the course of routine operations.’¹⁴ In addition to that, it has an interest towards the prevention of pollution from oil, bulk chemicals, dangerous goods, sewage, garbage and atmospheric pollution, and includes provisions such as those which require certain oil tankers to have double hulls’.¹⁵

This dissertation will commence by discussing the legal issues in the law of the sea and the regulatory developments, giving rise to environmental damage that may be caused by ships either by negligence or by accident. In addition to that, it will refer to Cypriot

¹⁰ 1948

¹¹ 1946

¹² 1994

¹³ 1973/1978

¹⁴ Adolf KY, Su Song ‘The Environmental impacts of pollutants generated by routine shipping operations on ports’ (2010) *Ocean and Coastal Management* 53.5-6, 301-311; North Sea Region, ‘Current legislation relevant to shipping’ <<https://northsearegion.eu/northsee/s-hipping/current-legislation-relevant-for-shipping/>> accessed 12 June 2019

¹⁵ North Sea Region, ‘Current legislation relevant to shipping’ <<https://northsearegion.eu/northsee/s-hipping/current-legislation-relevant-for-shipping/>> accessed 12 June 2019

law and UK law, by comparing and contrasting how those two countries react to such situations. Furthermore, it will become clear as to whether these countries act under European Union law, International law or they act in a combination of various laws and regulations. This study will assess the statutory advancements that were made in light of environmental damage caused by ships. The final part of this article will conclude by examining these upgrades and if any further developments are requiring to ensue. In order for what was already mentioned to be accomplished, it will be a necessity to use primary sources as well as secondary sources. For instance, this dissertation will bring to light legislations that will be referenced as primary sources and journals, articles, academic textbooks, considered as secondary sources. It should be noted, that all the above will be referenced effectively to existing scholarly works by utilising a narrative investigation. Ending, no empirical nor a doctrinal law approach will be used in this project. Nevertheless, the approach that will be used in this methodology is a comparative of Cypriot and British laws related to this topic.

2. MARPOL

In 1973, the International Convention for the Prevention of Pollution from Ships was modified by the Protocol of 1978. In short, it is called MARPOL which is the meaning for maritime pollution. It is one of the most significant international conventions, considering the environmental protection of the sea; and it was created by the International Maritime Organization with an end goal the limitation of contamination of the seas and oceans.¹⁶ The main scope of this agreement is to safeguard the

¹⁶ International Maritime Organization, 'International Convention for the Prevention of Pollution from Ships' (MARPOL) (IMO, 2019)

<[http://www.imo.org/en/About/Conventions/ListOfConventions/Pages/International-Convention-for-the-Prevention-of-Pollution-from-Ships-\(MARPOL\).aspx](http://www.imo.org/en/About/Conventions/ListOfConventions/Pages/International-Convention-for-the-Prevention-of-Pollution-from-Ships-(MARPOL).aspx)> accessed 15 June 2019

environment of the sea by striving to annihilate the pollution which is caused by oil, dumping, air pollution and other harmful substances and keep to a minimum degree the contamination of such substances.¹⁷

The MARPOL Convention was initially signed in 1973 at International Marine Organisation; however, it did not come into effect the signing date and as a result of several ‘spate of tanker accidents’ which took place in 1976-1977, the Protocol of 1978 was adopted.¹⁸ In 1983, the MARPOL convention 1973 and 1978 Protocol joint forces and ever since they act as a combination with the name MARPOL 73/98.¹⁹ Since 2018, 156 countries are members of the MARPOL convention dealing with international shipping.²⁰ All vessels that are flagged under nations that are notary to MARPOL are

¹⁷ International Maritime Organization, ‘International Convention for the Prevention of Pollution from Ships’ (MARPOL) (IMO, 2019)

<[http://www.imo.org/en/About/Conventions/ListOfConventions/Pages/International-Convention-for-the-Prevention-of-Pollution-from-Ships-\(MARPOL\).aspx](http://www.imo.org/en/About/Conventions/ListOfConventions/Pages/International-Convention-for-the-Prevention-of-Pollution-from-Ships-(MARPOL).aspx)> accessed 15 June 2019

¹⁸ International Maritime Organization, ‘International Convention for the Prevention of Pollution from Ships’ (MARPOL) (IMO, 2019)

<[http://www.imo.org/en/About/Conventions/ListOfConventions/Pages/International-Convention-for-the-Prevention-of-Pollution-from-Ships-\(MARPOL\).aspx](http://www.imo.org/en/About/Conventions/ListOfConventions/Pages/International-Convention-for-the-Prevention-of-Pollution-from-Ships-(MARPOL).aspx)> accessed 15 June 2019

¹⁹ International Maritime Organization, ‘International Convention for the Prevention of Pollution from Ships’ (MARPOL) (IMO, 2019)

<[http://www.imo.org/en/About/Conventions/ListOfConventions/Pages/International-Convention-for-the-Prevention-of-Pollution-from-Ships-\(MARPOL\).aspx](http://www.imo.org/en/About/Conventions/ListOfConventions/Pages/International-Convention-for-the-Prevention-of-Pollution-from-Ships-(MARPOL).aspx)> accessed 15 June 2019

²⁰ International Maritime Organization, ‘Status of Treaties’ (IMO, 5 August 2019)

<<http://www.imo.org/en/About/Conventions/StatusOfConventions/Documents/StatusOfTreaties.pdf>> accessed 23 July 2019

liable to its necessities, in spite of where they set sail. Therefore, member countries are accountable for ships recorded 'on their national ship registry'.²¹

MARPOL has six types of Annexes which each one of them is concerned with monitoring a particular emission group of vessels. The first annex came into effect in 1983 and it is considered to be one of the most significant universal marine ecological agreement.²² The convention was intended to limit the contamination of the oceans from the ships and boats and maintain the marine environment by minimising the oil pollution in the sea and any other detrimental essence.²³ It handles the environmental problem arising from the release of oil into the sea.²⁴ MARPOL Annex I refers to the oil discharge criteria for the prevention of oil pollution in the sea, which are recommended in the '1969 amendments to the 1954 International Convention for the Prevention of Pollution of the Sea by Oil (OILPOL)'.²⁵

2.1 ANNEX I

Particularly, in MARPOL Annex I, it defines the design characteristics of tankers that have as a purpose to limit the pollution which is caused by oil into the sea in the course

²¹ Claudia Copeland, 'Cruise Ship Pollution: Background, Laws and Regulations and Key Issues' [2011]

²² International Maritime Organization, 'Brief History of IMO' <<http://www.imo.org/en/About/HistoryOfIMO/Pages/Default.aspx>> accessed 10 July 2019

²³ International Maritime Organization, 'Brief History of IMO' <<http://www.imo.org/en/About/HistoryOfIMO/Pages/Default.aspx>> accessed 10 July 2019

²⁴ MARPOL 1973/1978, Annex I - Regulations for Preventing Oil Pollution from Ships

²⁵ Jeff B. Curtis, 'Vessel-source oil pollution and MARPOL 73/78: an international success story' [1984] *Envntl. L.* 15, 679-681

of ship functions and accidents.²⁶ Additionally, Annex I implements rules and regulations regarding the water treatment by using oily water separators which is an equipment used to separate oil and water mixtures into their different segments, for all big vessels which are used for commercial purposes and counterbalance and 'tank cleaning waste'.²⁷ In addition to that, Annex I presents the idea of 'special sea areas (PPSE)' which are viewed and acknowledged to be in danger of contamination by oil.²⁸ Furthermore, within Annex I is stated that it is prohibited the release of oil within them; however, there are a few negligible exemptions.²⁹

²⁶ MARPOL 73/78 Practical Guide, International Convention for the Prevention of Pollution from Ships (MARPOL 73/78, 2015) 5-10

²⁷ Arun K. Kota, Gibum Kwon, Wonjae Choi, Joseph M. Marby, Anish Tuteja, *Hygro-responsible membranes for effective oil-water separation* (Nature communications 3, 2012) 1025; Machinery Spaces, 'Oily water separator working principles and guidance' (2016) <<http://www.machineryspaces.com/oily-water-separator.html>> accessed 3 September 2019; Jason A. Caplan, Chris Newton, Donald Kelemen 'Technical report: Novel oil/water separator for treatment of oily bilge water' (Marine Technology and SNAME News, 2000) Volume 37 Number 2 111-115

²⁸ MARPOL 1973/1978, 'Annex I – Regulations for the Prevention of Oil Pollution' <http://www.marpoltraining.com/MMSKOREAN/MARPOL/Annex_I/> accessed 19 August 2019; Sian Prior, Aldo Chircop, Julian Roberts, 'Area-based management on the high seas: possible application of the IMO's particularly sensitive sea area concept' (2010) *The International Journal of Marine and Coastal Law* 25(4), 483-522

²⁹ MARPOL 1973/1978, 'Annex I – Regulations for the Prevention of Oil Pollution' <http://www.marpoltraining.com/MMSKOREAN/MARPOL/Annex_I/> accessed 19 August 2019; Sian Prior, Aldo Chircop, Julian Roberts, 'Area-based management on the high seas: possible application of the IMO's particularly sensitive sea area concept' (2010) *The International Journal of Marine and Coastal Law* 25(4), 483-522

Annex I is divided into two sections. The primary half manages the engine room waste and the subsequent half deals with cleaning the freight regions and tanks.³⁰ Through the years, they have been developed a number of different technologies and equipment to prevent engine room waste. Some of such types of machinery are named as ‘Oily water separators (OWS), Oil Content meters (OCM) and Port Reception Facilities’.³¹ In addition to that, there has been created another technology which has helped to a great extent concerning hygiene. It is called ‘Oil Discharge Monitoring Equipment (ODME)’, as it helps with the ‘cleaning of cargo areas and tanks’.³² Another fundamental part of MARPOL Annex I is the Oil Record book which assists the members of a ship to log and monitor the discharge of oil pollution in the sea in addition to other things.³³

2.2 ANNEX II

³⁰ International Maritime Organization, ‘International Convention for the Prevention of Pollution from Ships’ (MARPOL) (IMO, 2019)

<[http://www.imo.org/en/About/Conventions/ListOfConventions/Pages/International-Convention-for-the-Prevention-of-Pollution-from-Ships-\(MARPOL\).aspx](http://www.imo.org/en/About/Conventions/ListOfConventions/Pages/International-Convention-for-the-Prevention-of-Pollution-from-Ships-(MARPOL).aspx)> accessed 18 June 2019

³¹ International Maritime Organization, ‘International Convention for the Prevention of Pollution from Ships’ (MARPOL) (IMO, 2019)

<[http://www.imo.org/en/About/Conventions/ListOfConventions/Pages/International-Convention-for-the-Prevention-of-Pollution-from-Ships-\(MARPOL\).aspx](http://www.imo.org/en/About/Conventions/ListOfConventions/Pages/International-Convention-for-the-Prevention-of-Pollution-from-Ships-(MARPOL).aspx)> accessed 18 June 2019

³² International Maritime Organization, ‘International Convention for the Prevention of Pollution from Ships’ (MARPOL) (IMO, 2019)

<[http://www.imo.org/en/About/Conventions/ListOfConventions/Pages/International-Convention-for-the-Prevention-of-Pollution-from-Ships-\(MARPOL\).aspx](http://www.imo.org/en/About/Conventions/ListOfConventions/Pages/International-Convention-for-the-Prevention-of-Pollution-from-Ships-(MARPOL).aspx)> accessed 18 June 2019

³³ Resolution Marine Environment Protection Committee 1984, regulation 14(20)

In 1987, MARPOL Annex II came into effect presenting the criteria for the minimisation of oil contamination from hazardous fluid substances conveyed in substantial amounts.³⁴ In addition to that, it separates substances and presents comprehensive functioning standards and measures.³⁵ As it is stated already from Annex I, the release of toxins in the sea, is only permitted to 'reception facilities' with specific fixations and conditions.³⁶ In the 'special areas', it is applied even rigorous limitations.³⁷ Therefore, under no circumstances, there is allowed the residue discharge

³⁴ International Marine Organization, 'List of Conventions, other multilateral instruments and amendments in respect of which the organization performs depositary and other functions' (IMO, 24 June 2019)

<<http://www.imo.org/en/About/Conventions/StatusOfConventions/Documents/List%20of%20the%20Conventions%20and%20their%20amendments.pdf>> accessed 5 September 2019

³⁵ International Marine Organization, 'List of Conventions, other multilateral instruments and amendments in respect of which the organization performs depositary and other functions' (IMO, 24 June 2019)

<<http://www.imo.org/en/About/Conventions/StatusOfConventions/Documents/List%20of%20the%20Conventions%20and%20their%20amendments.pdf>> accessed 5 September 2019

³⁶ International Marine Organization, 'List of Conventions, other multilateral instruments and amendments in respect of which the organization performs depositary and other functions' (IMO, 24 June 2019)

<<http://www.imo.org/en/About/Conventions/StatusOfConventions/Documents/List%20of%20the%20Conventions%20and%20their%20amendments.pdf>> accessed 5 September 2019

³⁷ International Marine Organization, 'List of Conventions, other multilateral instruments and amendments in respect of which the organization performs depositary and other functions' (IMO, 24 June 2019)

<<http://www.imo.org/en/About/Conventions/StatusOfConventions/Documents/List%20of%20the%20Conventions%20and%20their%20amendments.pdf>> accessed 5 September 2019

that contains toxic waste within '12 miles of the nearest land'.³⁸ Chapter 7 of SOLAS Convention³⁹ along with the International Bulk Chemical Code, are both covered in the second Annex of MARPOL.⁴⁰ Any substance tankers that were developed before the first of July 1986 must consent to the necessities of the 'Code for the Construction and Equipment of Ship Carrying Dangerous Chemicals in Bulk'.⁴¹

2.3 Annex III

In 1992, another part of MARPOL came into effect with the name of Annex III.⁴² In particular, in comparison with the other annexes, annex III focuses on packing, labelling, documentation, notifications for avoiding contamination by detrimental contents and others. It complies with the course of action which is presented in the

³⁸ International Marine Organization, 'List of Conventions, other multilateral instruments and amendments in respect of which the organization performs depositary and other functions' (IMO, 24 June 2019)

<<http://www.imo.org/en/About/Conventions/StatusOfConventions/Documents/List%20of%20the%20Conventions%20and%20their%20amendments.pdf>> accessed 5 September 2019

³⁹ International Convention for the Safety of Life at Sea 1974, chapter 7

⁴⁰ International Maritime Organization, 'IBC Code'

<<http://www.imo.org/en/OurWork/Safety/Cargoes/CargoesInBulk/Pages/IBC-Code.aspx>> accessed 1 September 2019

⁴¹ International Maritime Organization, 'IBC Code'

<<http://www.imo.org/en/OurWork/Safety/Cargoes/CargoesInBulk/Pages/IBC-Code.aspx>> accessed 1 September 2019; IMO, *International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (IBC Code)* (Published 2016) 1.1

⁴² International Maritime Organization, 'International Convention for the Prevention of Pollution from Ships' (MARPOL) (IMO, 2019)

<[http://www.imo.org/en/About/Conventions/ListOfConventions/Pages/International-Convention-for-the-Prevention-of-Pollution-from-Ships-\(MARPOL\).aspx](http://www.imo.org/en/About/Conventions/ListOfConventions/Pages/International-Convention-for-the-Prevention-of-Pollution-from-Ships-(MARPOL).aspx)> accessed 21 June 2019

International Maritime Dangerous Goods Code which includes also marine pollutants as it was amended and entered into effect in 1991.⁴³

2.4 Annex IV

The release of crude sewage into the ocean can create a health risk. Likewise, sewage can prompt oxygen exhaustion and can be conspicuous visual contamination in seaside territories; which is a serious issue for nations with touristic enterprises.⁴⁴ The primary wellsprings of human-delivered sewage are coming from the land, for example, the civil sewers or treatment plants. Be that as it may, the release of sewage into the ocean from boats conduce further to marine infection.⁴⁵ As a result, MARPOL Annex IV came into force on 27 September 2003 which presents the necessities to handle the sea contamination by sewage from ships and how to control such pollution.⁴⁶

This annex contains a number of guidelines with respect to the release of sewage into the ocean from vessels. In addition, it comprises regulations concerning the boats' armament and frameworks for the control of waste release, the arrangement of offices

⁴³ International Maritime Organization, 'International Convention for the Prevention of Pollution from Ships' (MARPOL) (IMO, 2019)

<[http://www.imo.org/en/About/Conventions/ListOfConventions/Pages/International-Convention-for-the-Prevention-of-Pollution-from-Ships-\(MARPOL\).aspx](http://www.imo.org/en/About/Conventions/ListOfConventions/Pages/International-Convention-for-the-Prevention-of-Pollution-from-Ships-(MARPOL).aspx)> accessed 21 June 2019

⁴⁴ MARPOL 73/78, *International Convention for the Prevention of Pollution from Ships (MARPOL 73/78) Practical Guide* (2015) 19

⁴⁵ MARPOL 73/78, *International Convention for the Prevention of Pollution from Ships (MARPOL 73/78) Practical Guide* (2015) 19

⁴⁶ International Maritime Organization, 'International Convention for the Prevention of Pollution from Ships' (MARPOL) (IMO, 2019)

<[http://www.imo.org/en/About/Conventions/ListOfConventions/Pages/International-Convention-for-the-Prevention-of-Pollution-from-Ships-\(MARPOL\).aspx](http://www.imo.org/en/About/Conventions/ListOfConventions/Pages/International-Convention-for-the-Prevention-of-Pollution-from-Ships-(MARPOL).aspx)> accessed 21 June 2019

at ports and terminals for the gathering of effluent and claims for review and affirmation.⁴⁷ Moreover, it incorporates ‘a model International Sewage Pollution Prevention Certificate to be issued by national shipping administrations to ship under their jurisdiction’.⁴⁸

It is commonly viewed as that on the high oceans, the seas are equipped for absorbing and managing with crude sewage through normal bacterial activity.⁴⁹ Along these lines, the guidelines in Annex IV of MARPOL restrict the release of sewage into the ocean inside a predetermined separation of the closest land, except if they have inactivity an endorsed 'sewage treatment plant'.⁵⁰ All governments are required to guarantee the arrangement of satisfactory gathering offices at ports and terminals for the 'reception of sewage'.⁵¹ Existing vessels are obligated to abide with the arrangements of the amended Annex IV five years after the date of section into the power of Annex I.⁵² It is expected in accordance with the annex, the boats to be outfitted with an endorsed 'sewage

⁴⁷ MARPOL 73/78, *International Convention for the Prevention of Pollution from Ships (MARPOL 73/78) Practical Guide* (2015) 19

⁴⁸ MARPOL 73/78, *International Convention for the Prevention of Pollution from Ships (MARPOL 73/78) Practical Guide* (2015) 19

⁴⁹ MARPOL 73/78, *International Convention for the Prevention of Pollution from Ships (MARPOL 73/78) Practical Guide* (2015) 19

⁵⁰ MARPOL 73/78, *International Convention for the Prevention of Pollution from Ships (MARPOL 73/78) Practical Guide* (2015) 19

⁵¹ MARPOL 73/78, *International Convention for the Prevention of Pollution from Ships (MARPOL 73/78) Practical Guide* (2015) 19

⁵² MARPOL 73/78, *International Convention for the Prevention of Pollution from Ships (MARPOL 73/78) Practical Guide* (2015) 19

treatment plant or an approved sewage commuting and disinfecting system or a sewage holding tank.⁵³

In 2004, the annex was revised and it focuses on all new where they occupied with global voyages of more than 400 gross tonnages or are allowed to transfer more than 15 people.⁵⁴ Existing vessels are obligated to abide with the arrangements of the amended Annex IV five years after the date of section into the power of Annex I; more specifically from 27 September 2008.⁵⁵ It is expected in accordance with the annex, the boats to be outfitted with an endorsed ‘sewage treatment plant or an approved sewage commuting and disinfecting system or a sewage holding tank’.⁵⁶

The release of waste in the ocean is restricted, with the only exception of when the vessel has in an activity an endorsed sewage treatment plant or when the ship is releasing purified sewage by using an authorised framework at a range of more three nautical miles from the closest land.⁵⁷ The waste, which is not comminuted or

⁵³ MARPOL 73/78, *International Convention for the Prevention of Pollution from Ships (MARPOL 73/78) Practical Guide* (2015) 19

⁵⁴ MARPOL 73/78, *International Convention for the Prevention of Pollution from Ships (MARPOL 73/78) Practical Guide* (2015) 19

⁵⁵ MARPOL 73/78, *International Convention for the Prevention of Pollution from Ships (MARPOL 73/78) Practical Guide* (2015) 19

⁵⁶ MARPOL 73/78, *International Convention for the Prevention of Pollution from Ships (MARPOL 73/78) Practical Guide* (2015) 19

⁵⁷ MARPOL 73/78, *International Convention for the Prevention of Pollution from Ships (MARPOL 73/78) Practical Guide* (2015) 19

decontaminated, must be released at a distance of more than twelve nautical miles from the closest accessible land.⁵⁸

2.5 Annex V

This Annex came into effect in 1988 and it presents the ‘Regulations for the Prevention of Pollution by Garbage from Ships’.⁵⁹ It shows how far from land vessels are permitted to discharge products in the ocean and subdivides different kinds of garbage and marine waste.⁶⁰ In the ‘special areas’, the demands are much stringent; nevertheless, the most conspicuous part of Annex V is the absolute prohibition of throwing plastic waste in the sea.⁶¹

Annex V was altered several times from its original text. In particular, in 2012 were adopted ‘Guidelines for the Implementation of MARPOL Annex VI’.⁶² The purpose of

⁵⁸ MARPOL 73/78, *International Convention for the Prevention of Pollution from Ships (MARPOL 73/78) Practical Guide* (2015) 19

⁵⁹ International Marine Organization, ‘Prevention of Pollution by Garbage from Ships’ (IMO, 2019) <<http://www.imo.org/en/OurWork/environment/pollutionprevention/garbage/Pages/Default.aspx>> accessed 17 June 2019

⁶⁰ International Marine Organization, ‘Prevention of Pollution by Garbage from Ships’ (IMO, 2019) <<http://www.imo.org/en/OurWork/environment/pollutionprevention/garbage/Pages/Default.aspx>> accessed 17 June 2019

⁶¹ International Marine Organization, ‘Prevention of Pollution by Garbage from Ships’ (IMO, 2019) <<http://www.imo.org/en/OurWork/environment/pollutionprevention/garbage/Pages/Default.aspx>> accessed 17 June 2019

⁶² Resolution Marine Environment Protection Committee 2012, regulation 219 (63); International Marine Organization, ‘2012 Guidelines for the Implementation of MARPOL Annex V’ (IMO, 2 March 2012)

<<http://www.imo.org/en/OurWork/Environment/PollutionPrevention/Garbage/Documents/2014%20rev>

such guidelines was to help governments in creating and establishing domestic rules and legislation which can be performed along with Annex V.⁶³ Furthermore, it was created to assist shipowners, managers, the crew, cargo owners and machinery suppliers to abide with the criteria that were set out in Annex V and the appropriate national legislation.⁶⁴ The final aim of these guidelines is to support port and terminal operators who are responsible for evaluating the demand and supplying the appropriate reception facilities for the trash which are produced on every type of ships.⁶⁵

ision/RESOLUTION%20MEPC.219(63)%20Guidelines%20for%20the%20Implementation%20of%20MARPOL%20Annex%20V.pdf> accessed 29 June 2019

⁶³ Resolution Marine Environment Protection Committee 2012, regulation 219 (63); International Marine Organization, '2012 Guidelines for the Implementation of MARPOL Annex V' (IMO, 2 March 2012)

<[http://www.imo.org/en/OurWork/Environment/PollutionPrevention/Garbage/Documents/2014%20revision/RESOLUTION%20MEPC.219\(63\)%20Guidelines%20for%20the%20Implementation%20of%20MARPOL%20Annex%20V.pdf](http://www.imo.org/en/OurWork/Environment/PollutionPrevention/Garbage/Documents/2014%20revision/RESOLUTION%20MEPC.219(63)%20Guidelines%20for%20the%20Implementation%20of%20MARPOL%20Annex%20V.pdf)> accessed 29 June 2019

⁶⁴ Resolution Marine Environment Protection Committee 2012, regulation 219 (63); International Marine Organization, '2012 Guidelines for the Implementation of MARPOL Annex V' (IMO, 2 March 2012)

<[http://www.imo.org/en/OurWork/Environment/PollutionPrevention/Garbage/Documents/2014%20revision/RESOLUTION%20MEPC.219\(63\)%20Guidelines%20for%20the%20Implementation%20of%20MARPOL%20Annex%20V.pdf](http://www.imo.org/en/OurWork/Environment/PollutionPrevention/Garbage/Documents/2014%20revision/RESOLUTION%20MEPC.219(63)%20Guidelines%20for%20the%20Implementation%20of%20MARPOL%20Annex%20V.pdf)> accessed 29 June 2019

⁶⁵ Resolution Marine Environment Protection Committee 2012, regulation 219 (63); International Marine Organization, '2012 Guidelines for the Implementation of MARPOL Annex V' (IMO, 2 March 2012)

<[http://www.imo.org/en/OurWork/Environment/PollutionPrevention/Garbage/Documents/2014%20revision/RESOLUTION%20MEPC.219\(63\)%20Guidelines%20for%20the%20Implementation%20of%20MARPOL%20Annex%20V.pdf](http://www.imo.org/en/OurWork/Environment/PollutionPrevention/Garbage/Documents/2014%20revision/RESOLUTION%20MEPC.219(63)%20Guidelines%20for%20the%20Implementation%20of%20MARPOL%20Annex%20V.pdf)> accessed 29 June 2019

2.6 Annex VI

The final MARPOL Annex until now is the seventh which came into force in 2005. It presents the criteria to control air emissions being produced by vessels, along with the emission of ozone annihilation and 'shipboard incineration'.⁶⁶ Furthermore, it sets out claims of 'emission and fuel requirements for marine engines under the IMO', more precisely it sets boundaries on NO_x⁶⁷ and Sox⁶⁸ Emission Control Areas, that discharges from sewages from exhaust gas cleaning systems, drilling platforms, drilling rings etc.⁶⁹

In October 2008, an amendment was adopted by the MARPOL Annex VI which considered that the applications shall apply to all ships unless it is stated differently. In addition to that, it clarified the meaning of some definitions by making it more

⁶⁶ International Maritime Organization, 'Prevention of Air Pollution from Ships' (IMO, 2019)

<<http://www.imo.org/en/OurWork/Environment/PollutionPrevention/AirPollution/Pages/Air-Pollution.aspx>> accessed 4 September 2019

⁶⁷ Hulda Winnes, Erik Fridel 'Emissions of NO_x and particles from manoeuvring ships' Transportation Research Part D: Transportation and Environment (2010) 15(4) 204-211

⁶⁸ International Maritime Organization, 'Sulphur oxides (SO_x) and Particulate Matter (PM) – Regulation 14' (IMO, 2019)

<[http://www.imo.org/en/OurWork/Environment/PollutionPrevention/AirPollution/Pages/Sulphur-oxides-\(SOx\)-%E2%80%93Regulation-14.aspx](http://www.imo.org/en/OurWork/Environment/PollutionPrevention/AirPollution/Pages/Sulphur-oxides-(SOx)-%E2%80%93Regulation-14.aspx)> accessed 1 September 2019; Ibrahim S. Seddiek, Mohamed M. Elgohary 'Eco-friendly selection of ship emissions reduction strategies with emphasis on Sox and NO_x emissions' International Journal of Naval Architecture and Ocean Engineering (2014) 6.3, 737-748

⁶⁹ Jerzy Herdzik, 'Emissions from marine engines versus IMO certification and requirements of tier 3' Journal of KONES (2011) 18, 161-167

understandable, and the list goes on.⁷⁰ As from July 2010, the MARPOL Annex VI Regulation 12 was amended as from that time forward, all ships, boats and any other kind of vessel should have ‘a list and a record book of Ozone Depleting Substances’.⁷¹ In other words, the alteration takes into account auditing and it also gives great importance into maintaining documentation of Ozone Depleting Substances. In addition to that, Regulation 14⁷² also was modified by conveying that all ship before entering and after leaving Emission Control Areas, ought to record fuel oil change where new methods are being used by applying various categories of fuel oils.⁷³ Alternatively, it can be said that the amended Regulation 14⁷⁴ gives great attention to the obligatory fuel oil change on an approach for ships that go in and get out of the Emission Control areas.⁷⁵

⁷⁰ Resolution Marine Environment Protection Committee 2008, annex 13 regulation 176(58)

⁷¹ ANCO Maritime Activities Ltd ‘Record Keeping of Ozone Depleting Substances should be maintained on board after 1 July 2010’ (Archive, 2 May 2010)

<https://web.archive.org/web/20100522170617/http://www.ancomaritime.com/files/Ozone_Depleting_Substances_Marpol_Regulation_12.html> accessed 26 July 2019

⁷² MARPOL 73/78, annex VI

⁷³ ANCO Maritime Activities Ltd, ‘Mandatory Fuel Oil Change Over Procedures as from July 2010’ (Archive, 8 May 2010)

<https://web.archive.org/web/20100522170546/http://www.ancomaritime.com/files/Fuel_Oil_Change_over_procedures%20.html> accessed 22 June 2010

⁷⁴ MARPOL 73/78 Annex VI; International Maritime Organization, *Revised MARPOL annex VI: Regulations for the prevention of air pollution from ships and NOx technical code 2008* (2nd edition, IMO 2009) vi, 212

⁷⁵ ANCO Maritime Activities Ltd, ‘Mandatory Fuel Oil Change Over Procedures as from July 2010’ (Archive, 8 May 2010)

The measures of the International Maritime Organization to be binding must be confirmed by an aggregate number of member states whose joined gross tonnage stand for a minimum of 50% of the world's gross tonnage.⁷⁶ Notwithstanding, it has been established an arrangement of an implied confirmation, where if no member country objects before a certain period have passed, therefore there is a presumption that they consent to the treaty.⁷⁷

Taking into account what was mentioned in this section, it should be also added that all six annexes have been sanctioned by the necessary number of countries needed. The nation where a ship is enrolled, called as Flag State is in charge of affirming the ship's consistency with MARPOL's contamination counteractive action principles.⁷⁸ Every signer country is in charge of sanctioning residential laws to execute the convention and efficiently promises to abide with the agreement, annexes and any other related laws of different countries.⁷⁹ In Cyprus for example, the relevant implementation

<https://web.archive.org/web/20100522170546/http://www.ancomaritime.com/files/Fuel_Oil_Change_over_procedures%20.html> accessed 22 June 2010

⁷⁶ International Maritime Organization, 'Convention on the International Maritime Organization' (IMO, 2019) <<http://www.imo.org/en/About/Conventions/ListOfConventions/Pages/Convention-on-the-International-Maritime-Organization.aspx>> accessed 5 September 2019

⁷⁷ International Maritime Organization, 'Convention on the International Maritime Organization' (IMO, 2019) <<http://www.imo.org/en/About/Conventions/ListOfConventions/Pages/Convention-on-the-International-Maritime-Organization.aspx>> accessed 5 September 2019

⁷⁸ Gerhard Kiehne, 'Investigation, detention and release of ships under the Paris Memorandum of Understanding on Port State Control: a view from practice' (1996) *The International Journal of Marine and Coastal Law* 11.2, 217-218

⁷⁹ Gerhard Kiehne, 'Investigation, detention and release of ships under the Paris Memorandum of Understanding on Port State Control: a view from practice' (1996) *The International Journal of Marine and Coastal Law* 11.2, 218-224

legislation is the Environmental Liability Directive⁸⁰, the Waste Directive⁸¹, the Merchant Shipping (Ship Source Pollution) Law of 2008 and its subsequent amendments⁸², the Solid and Dangerous Waste Law⁸³, and the Environmental Liability with regard to the Prevention and Remedying of Environmental Damage Law.⁸⁴ More legislations are being followed in Cyprus, not only domestic but also international, which help for the prevention of pollution in the sea.⁸⁵ In the United Kingdom, the applicable execution enactments, are the following: The Merchant Shipping

⁸⁰ 2004/35 (EC)

⁸¹ 75/442 (EC)

⁸² Law 45(I)/2008

⁸³ 2002, 215(I)/2002

⁸⁴ 189(I)/2007

⁸⁵ The Agreement Between Cyprus, Israel and Egypt for Cooperation in Combating Major Marine Pollution Incidents in the Mediterranean Law of 2001, Law 21(III)/2001; The International Convention on Civil Liability for Oil Pollution Damage of 1969 and its Protocols of 1976 and 1992 and Amendments of 2000; The International Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean and its Protocols and amendments (Barcelona Convention); The International Convention for the Prevention of Pollution from Ships of 1973 as modified by the Protocol of 1978 (MARPOL 73/78) and its amendments; The Protocol of 1992 Amending the International Convention for the Establishment of an International Fund for Compensation for Oil Pollution Damage of 1971 and Matters Connected Therewith (Amendment) Law of 1997, Law 15(III)/97; The International Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matters of 1972, as amended; The International Convention on Civil Liability for Bunker Oil Pollution Damage of 2001; The International Convention on the Control of Harmful Anti-fouling Systems on Ships of 2001; The International Convention for the Control and Management of Ships' Ballast Water and Sediments 2004; The International Convention on Liability and Compensation for Damage in Connection with the Carriage of Hazardous and Noxious Substances by Sea of 1996 (HNS Convention) and for Matters Connected Therewith Law of 2004, Law 21(III)/2004..

(Prevention of Air Pollution from Ships) (Miscellaneous Amendments) Regulations 2019; The Merchant Shipping and Other Transport (Environmental Protection) (Amendment) (EU Exit) Regulations 2019; The Merchant Shipping (Prevention of Oil Pollution) Regulation 2019; The Merchant Shipping (Oil Pollution Preparedness, Response and Co-Operation Convention) Amendment) Regulations 2015; The Merchant Shipping (Prevention of Pollution) (Limits) (Revocation) Regulations 2013; and many others. One of the problems in actualising MARPOL emerges from the universal idea of oceanic transportation. The nation that the ship visits can direct its very own assessment to confirm a ship is in consistence with the universal standards and can keep the ship where it finds a considerable amount of non-conformity.⁸⁶ At the point where events take place out of a nation's jurisdiction or the province is impossible to be designated, the country mentions the circumstances to the flag states, in line with MARPOL agreement.⁸⁷

3. United Kingdom

The United Kingdom is constituted by Scotland, England, Wales and Northern Island.⁸⁸ It is an island country, located in northwestern Europe and it deals with affairs of

⁸⁶ Sabine S. Knapp, Philip Hans PH HBF Franses, *Analysis of the Marine Inspection Regimes – Are ships over inspected?* (Econometric Institute Report - Erasmus University Rotterdam, 2006)

⁸⁷ R. Sundara Raman, G. Sankaranarayanan, n. Manoharan, S. Sendilvelan 'Experimental Investigation on Emission Characteristics of a Marine Diesel Engine with Catalytic Convertor for Compliance with Marpol Regulations' (Asian Review of Mechanical Engineering, Vol. 4 No. 2, 2015) 1-10

⁸⁸ Peter Trudgill, Jean Hannah, *International English: A guide to the varieties of standard English* (Routledge, 5th edition, 2013) 8

shipping, navigation, ports, trade and other.⁸⁹ This is because until the invention of air transport and the creation of the Channel Tunnel, transportation by the sea was the main method for arriving at the British Isles. Consequently, sea exchange and maritime power have consistently had an extraordinary significance.⁹⁰ Before the Treaty⁹¹, the sea history of the British Isles was generally commanded by that of England.⁹²

In the UK, the Merchant Shipping (Prevention of Air Pollution from Ships) Regulations 2008 actualize the 1997 Protocol of the International Convention on the Prevention of Pollution from Ships.⁹³ It is provided by the Protocol, in order for the International Regulations for the Prevention of Air Pollution from ships to be instituted, it will be needed to include the new annex VI to MARPOL 73/78.⁹⁴ To a large extent, this happens because annex VI consists of 19 Regulations and it also contains a ‘Technical

⁸⁹ William Milburn, *Oriental Commerce: Containing a Geographical Description of the Principal Places in the East Indies, China and Japan, with Their Produce, Manufacturers, and Trade, Including the Coasting Or Country Trade from Port to Port: also the Rise and Progress of the Trade of the Various European Nations with the Eastern World, Particularly that of the English East India Company from the Discovery of the Passage Round the Cape of Good Hope to the Present Period: with an account of the Company's Establishments, Revenues, Debts, Assts and at Home and Abroad* (Black, Parry & Co., Volume 1, 1813) 231

⁹⁰ Eve Darian-Smith, *Bridging divides: The Channel Tunnel and the English legal identity in the new Europe* (University of California Press, 1999) 7-27; Nicholas AM. Rodger, *The safeguard of the Sea: A naval history of Britain* (Norton & Company, Volume 1, 1998) 693

⁹¹ Acts of Union 1707

⁹² Hance D. Smith, ‘The British Isles and the age of exploration – a maritime perspective’ (GeoJournal 16.4, 1992) 483-487

⁹³ MARPOL 73/78

⁹⁴ Merchant Shipping Notice 1819

Code on the Control of Emissions of Nitrogen Oxides from Marine Diesel Engines'.⁹⁵

The Merchant Shipping Notice is a document that should be read in conjunction with Marine Guidance Note, as it entails details related to The Merchant Shipping (Prevention of Air Pollution from Ships) Regulation 2008 and also, gives specialised data on the matter in question in those Regulations.⁹⁶

The Merchant Shipping Notice aims to give an analytical analysis of the technical aspects of the United Kingdoms' actions in regard to the Annex VI of MARPOL, in connection with the Regulations.⁹⁷ On the other hand, Marine Guidance Notice provides help and instructions regarding the amelioration of safe transportation and life at sea, as well as to put a stop or even minimise the sea contamination from shipping.⁹⁸

The principle zone for producing offshore oil and gas in the United Kingdom is located in the North Sea. In 1970, it has been discovered in the North Sea for the first time the oil fields.⁹⁹ It seems that in the last during the last 10 years, the oil and gas drilling has arrived at its pinnacle albeit, however, recent studies demonstrate that it is proceeding to increment.¹⁰⁰

The responsibility for oil slicks in the United Kingdom is on an exacting risk premise, under the "polluter pays" guideline. There are various methods of compensation for liability, including tort claims, and the administrator of the seaward establishment has

⁹⁵ Netherlands Regulatory Framework, *NOx Technical Code Technical code on control of emission of Nitrogen oxides from marine diesel engines* (2007) (MEPC. 132(53)) 6.3.11.3

⁹⁶ Merchant Shipping Notice 1819

⁹⁷ Merchant Shipping Notice 1819

⁹⁸ Andrew W. Anderson 'National and International Efforts to Prevent Traumatic Vessel Source Oil Pollution' (1975) U.M.L.R 30, 985

⁹⁹ Library of Congress, 'Oil Spill Liability and Regulatory Regime UK' [2015]

¹⁰⁰ Library of Congress, 'Oil Spill Liability and Regulatory Regime UK' [2015]

a boundless lawful obligation for the full expenses related to any occurrences of contamination.¹⁰¹ Exceptional standards have been entered into force for contamination that is brought about by a seaward establishment by the Offshore Pollution Liability Agreement of 1975.¹⁰² The OPOL Agreement was presented as a between time measure during the exchange period of the Convention of Civil Liability for Oil Pollution Damage coming about because of Exploration for and Exploitation of Seabed Mineral Resources.¹⁰³ Dealings with this Convention were at last ineffective and it was rarely endorsed. Notwithstanding, the UK believed the OPOL Agreement to be an acceptable method for accommodating a severe obligation system on the off chance that an administrator should default on furnishing the tidy up expenses related to an incident.¹⁰⁴ The OPOL understanding hence becomes effective if any administrator defaults on paying tidy up expenses, with a present top of US\$120 million.¹⁰⁵

The OPOL Agreement is a voluntary oil contamination reimbursement project that gives assurances of instalment to cases up to US\$120 million for all individuals from OPOL to give a methodical way to redressing and repaying any Person who continues Pollution Damage and any Public Authority which acquires costs for accepting Remedial Measures because of a Discharge of Oil from any Offshore Facility.¹⁰⁶ The participation in OPOL is not obligatory, as any-one can help without compensation.¹⁰⁷

¹⁰¹ Library of Congress, 'Oil Spill Liability and Regulatory Regime UK' [2015]

¹⁰² Library of Congress, 'Oil Spill Liability and Regulatory Regime UK' [2015]

¹⁰³ Library of Congress, 'Oil Spill Liability and Regulatory Regime UK' [2015]

¹⁰⁴ Library of Congress, 'Oil Spill Liability and Regulatory Regime UK' [2015]

¹⁰⁵ Library of Congress, 'Oil Spill Liability and Regulatory Regime UK' [2015]

¹⁰⁶ Library of Congress, 'Oil Spill Liability and Regulatory Regime UK' [2015]

¹⁰⁷ Library of Congress, 'Oil Spill Liability and Regulatory Regime UK' [2015]

However, it is a permit prerequisite to either be a part or have a similar obligation inclusion accommodated by OPOL. At the moment, all administrators in the United Kingdom are parties from OPOL.¹⁰⁸

The goals that OPOL have is to give a deliberate way to the quick settlement of cases emerging out of a break or release of oil from seaward investigation and generation tasks; to empower quick medicinal activity by the gatherings; to guarantee the monetary duty of the gatherings to meet their commitments; to give a component to guaranteeing that cases are gotten together to the greatest obligation under OPOL and finally to keep away from muddled jurisdictional issues.¹⁰⁹

It should be taken into account that claimants under OPOL are acknowledged to be Public Authorities who wish to make a claim ‘for any remedial measures taken to prevent, mitigate or eliminate pollution damage, or to remove or neutralise the oil following an escape or discharge’.¹¹⁰ In addition to that, a claim for redress can also issue any person who has suffered damages by pollution from oil spills in the sea in a situation where that person has suffered ‘direct loss or damage due to pollution’.¹¹¹ Ending, there are also exceptions in regards to oil pollution. Such exceptions are if the contamination was caused as an end result of ‘war hostilities, an exceptional natural phenomenon, an act or omission of a claimant, or a third party that intended to cause

¹⁰⁸ Library of Congress, ‘Oil Spill Liability and Regulatory Regime UK’ [2015]

¹⁰⁹ OPOL, ‘The offshore pollution liability association ltd’ (2015) <<http://www.opol.org.uk/about.htm>> accessed 25 August 2019

¹¹⁰ OPOL, ‘The offshore pollution liability association ltd’ (2015) <<http://www.opol.org.uk/about.htm>> accessed 25 August 2019

¹¹¹ OPOL, ‘The offshore pollution liability association ltd’ (2015) <<http://www.opol.org.uk/about.htm>> accessed 25 August 2019

the damage, negligence or a wrongful act from the state or authority; if the resulted from compliance with instruction or conditions from the licensing state'.¹¹²

To conclude, the United Kingdom has different legislations and course of actions in relation to pollution. It follows not only domestic but also international laws, and they are prepared in case of oil spills in the ocean to act accordingly.

4. Cyprus

The Mediterranean Sea is exceptionally powerless against the contamination that occurs by vessels.¹¹³ The latest finds of oil and natural gas in the eastern Levantine basin, have prompted to faster drilling, with some nations being at different phases of investigation and derivation and 'others having mapped blocks' for authorising, therefrom altogether enlarging and expanding the dangers of a potential oil spill.¹¹⁴ Because of the multiple drilling by numerous neighbouring nations, any spills from profound water wells will be inclined to 'cross boarder transport' because of the exceptionally changeable winds and sea flows.¹¹⁵ This hazard is surveyed through a

¹¹² OPOL, 'The offshore pollution liability association ltd' (2015) <<http://www.opol.org.uk/about.htm>> accessed 25 August 2019

¹¹³ Steve Brenner, 'The Risk of Potential Cross Boarder Transport of Oil Spills in the Semi-Enclosed Eastern Mediterranean Sea' (2018) <<https://www.intechopen.com/online-first/the-risk-of-potential-cross-border-transport-of-oil-spills-in-the-semi-enclosed-eastern-mediterranea>> accessed 08 September 2019

¹¹⁴ Steve Brenner, 'The Risk of Potential Cross Boarder Transport of Oil Spills in the Semi-Enclosed Eastern Mediterranean Sea' (2018) <<https://www.intechopen.com/online-first/the-risk-of-potential-cross-border-transport-of-oil-spills-in-the-semi-enclosed-eastern-mediterranea>> accessed 08 September 2019

¹¹⁵ Steve Brenner, 'The Risk of Potential Cross Boarder Transport of Oil Spills in the Semi-Enclosed Eastern Mediterranean Sea' (2018) <<https://www.intechopen.com/online-first/the-risk-of-potential-cross-border-transport-of-oil-spills-in-the-semi-enclosed-eastern-mediterranea>> accessed 08 September 2019

progression of reproductions with an oil slick model constrained with high analysis of sea flows and winds.¹¹⁶

The framework which was considered is for explosions of a half month term, situated into the penetrating zones of every one of different nations.¹¹⁷ These models, form the principles to facilitate further ecological appraisal and hazard examination.¹¹⁸ In addition, they underline the significance of a worldwide participation and collaboration to deal with and moderate the ecological effects which would end up from a possible oil spill from any of the nations included.¹¹⁹

cross-border-transport-of-oil-spills-in-the-semi-enclosed-eastern-mediterranea> accessed 08 September 2019

¹¹⁶ Steve Brenner, ‘The Risk of Potential Cross Boarder Transport of Oil Spills in the Semi-Enclosed Eastern Mediterranean Sea’ (2018) <<https://www.intechopen.com/online-first/the-risk-of-potential-cross-border-transport-of-oil-spills-in-the-semi-enclosed-eastern-mediterranea>> accessed 08 September 2019

¹¹⁷ Steve Brenner, ‘The Risk of Potential Cross Boarder Transport of Oil Spills in the Semi-Enclosed Eastern Mediterranean Sea’ (2018) <<https://www.intechopen.com/online-first/the-risk-of-potential-cross-border-transport-of-oil-spills-in-the-semi-enclosed-eastern-mediterranea>> accessed 08 September 2019

¹¹⁸ Steve Brenner, ‘The Risk of Potential Cross Boarder Transport of Oil Spills in the Semi-Enclosed Eastern Mediterranean Sea’ (2018) <<https://www.intechopen.com/online-first/the-risk-of-potential-cross-border-transport-of-oil-spills-in-the-semi-enclosed-eastern-mediterranea>> accessed 08 September 2019

¹¹⁹ Steve Brenner, ‘The Risk of Potential Cross Boarder Transport of Oil Spills in the Semi-Enclosed Eastern Mediterranean Sea’ (2018) <<https://www.intechopen.com/online-first/the-risk-of-potential-cross-border-transport-of-oil-spills-in-the-semi-enclosed-eastern-mediterranea>> accessed 08 September 2019

Cyprus is an independent island, small in size, and is situated in the Eastern Mediterranean Sea, in the middle of three continents.¹²⁰ In 2004, it decided to join the European Union and as a result, it was benefited within a common European market and also it adopted the European law like every other member state.¹²¹ The legal system in Cyprus is based on the United Kingdom legal framework which was established through history, as it is used to be a British colony that became independent in 1960.¹²² In the last few years, it has been discovered in Cyprus, oil and gas and it is currently under action to exploit its energy resources.¹²³ Cyprus move forward with the development of the oil and gas segment. The ongoing disclosures of hydrocarbons inside the Cyprus Exclusive Economic Zone have pulled in a lot of universal consideration. In addition to that, a lot of attention was attracted locally regarding a positive view of what is about to come in the near future.¹²⁴ The previous decade, Cyprus was granted an investigational permit agreement, the Cypriot Exclusive

¹²⁰ Cyprus Island, 'Where is Cyprus?' <<https://www.cyprusisland.net/where-is-cyprus>> accessed 5 September 2019

¹²¹ Deloitte, 'Cyprus, Oil and Gas' (Deloitte, 2018)
<https://www2.deloitte.com/content/dam/Deloitte/cy/Documents/energy-resources/oil-and-gas/CY_EnergyAndResources_OilAndGas_Noexp.pdf> accessed 2 July 2019

¹²² Deloitte, 'Cyprus, Oil and Gas' (Deloitte, 2018)
<https://www2.deloitte.com/content/dam/Deloitte/cy/Documents/energy-resources/oil-and-gas/CY_EnergyAndResources_OilAndGas_Noexp.pdf> accessed 2 July 2019

¹²³ CSA International, 'Environmental Impact Assessment for Exploratory Drilling Block 12, Offshore Cyprus' (2011) Rev. 2, ES4

¹²⁴ Nicos D. Papakyriakou, 'Oil and Gas in Cyprus – Where potential lies' (Deloitte)
<<https://www2.deloitte.com/cy/en/pages/energy-and-resources/articles/deloitte-guide-to-oil-and-gas.html>> accessed 17 May 2019

Economic Zone.¹²⁵ Therefore, it participated in sharing contracts with various organisations dealing with oil and gas worldwide.¹²⁶ During this time, there was a considerable analysis and assessment efficiency embraced by the administrators in offshore Cyprus.¹²⁷

As in the matter of law, Cyprus used the European Union Directive premise in order to get an allowance and get empowered to search, inspect and produce hydrocarbons.¹²⁸ Furthermore, in 1988, it endorsed the United Nations Convention on the Law of the Sea.¹²⁹ And in 2011, an assessment was published, considering the ‘Environmental Impact Assessment for Drilling Operations Block 12, Offshore Cyprus’.¹³⁰ The environmental impact assessment stated that other routine releases will be discharged into the sea in relation to the prohibitions and constraints which is stated under the ‘International Convention for the Prevention of Pollution from Ships’ guidelines, Barcelona Convention guidelines and Noble Energy's Offshore Discharge Plan, as well

¹²⁵ Directive 94/22/EC

¹²⁶ Nicos D. Papakyriakou, ‘Oil and Gas in Cyprus – Where potential lies’ (Deloitte) <<https://www2.deloitte.com/cy/en/pages/energy-and-resources/articles/deloitte-guide-to-oil-and-gas.html>> accessed 17 May 2019

¹²⁷ Nicos D. Papakyriakou, ‘Oil and Gas in Cyprus – Where potential lies’ (Deloitte) <<https://www2.deloitte.com/cy/en/pages/energy-and-resources/articles/deloitte-guide-to-oil-and-gas.html>> accessed 17 May 2019

¹²⁸ Directive 94/22/EC

¹²⁹ UNCLOS 1982

¹³⁰ CSA International, ‘Environmental Impact Assessment for Exploratory Drilling Block 12, Offshore Cyprus’ (2011) Rev. 2, 1-2

as 'treated sewage and domestic waste, deck drainage and miscellaneous discharges'.¹³¹

All releases are relied upon to be weakened to foundation levels with practically no real effect on water quality or marine biota.¹³²

Despite this, Cyprus has adopted some rules and regulations to prevent oil pollution or any other kind of pollution in the sea. To begin with, the governmental department of environment is dealing with all environmental matters on land and in the sea.¹³³ As it was stated above, Cyprus is a nation and an island known during that time for its vital area on the globe. It is arranged in the crossing point of three main-lands and subsequently, it gets inside its maritime outskirts a basic measure of marine traffic.¹³⁴ There is a high risk for oil contamination in the area because of the 'conflict of the oil transport activity and the high environmental and social capital of the North-Eastern Mediterranean renders'.¹³⁵ In the last ten years, they have been listed only seven serious

¹³¹ CSA International, 'Environmental Impact Assessment for Exploratory Drilling Block 12, Offshore Cyprus' (2011) Rev. 2, 3-12

¹³² CSA International, 'Environmental Impact Assessment for Exploratory Drilling Block 12, Offshore Cyprus' (2011) Rev. 2, 3-12

¹³³ Department of Environment, 'Water and Soil Pollution' (Ministry of Agriculture, Rural Development and Environment, 06 September 2019)

http://www.moa.gov.cy/moa/environment/environmentnew.nsf/page17_en/page17_en?OpenDocument accessed 08 September 2019

¹³⁴ George Kirkos, George Zodiatis, Loizos Loizides, Marines Ioannou, 'Oil Pollution in the Waters of Cyprus' in A. Carpenter, A. Kostianoy (eds) *Oil Pollution in the Mediterranean Sea: Part II. The Handbook of Environmental Chemistry*, volume 84 (Springer International Publishing AG, 2017) 229

¹³⁵ George Kirkos, George Zodiatis, Loizos Loizides, Marines Ioannou, 'Oil Pollution in the Waters of Cyprus' in A. Carpenter, A. Kostianoy (eds) *Oil Pollution in the Mediterranean Sea: Part II. The Handbook of Environmental Chemistry*, volume 84 (Springer International Publishing AG, 2017) 229

accidents in the sea and have been discovered ‘through satellite observation systems’ more than one thousand oil spills.¹³⁶ Nowadays, due to the hydrocarbon discoveries in the region of interest, there is a high possibility that in the near future will have an even higher risk of oil spills as a result to an increased number of oil traffic in the area.¹³⁷ Cyprus, by adopting a National Contingency Plan (NCP) for Oil Pollution Combating is aiming to face on any possible environmental threats regarding oil pollution with the help not only the government sector but the private one as well.¹³⁸ The observation of such oil spills, either being accidental or intentional is attained by the air, sea and space by using ‘satellite remote sensing monitoring and oil spill forecasting models’.¹³⁹ Cyprus is an island acquainted for its strong socio-economic bonds which have with the sea. The sea for the island, is not just something that exists, it is an ecological heritage where even the smallest oil spill to drop in its waters, no matter how insignificant someone can consider it, in reality, has consequential results towards the environment,

¹³⁶ George Kirkos, George Zodiatis, Loizos Loizides, Marines Ioannou, ‘Oil Pollution in the Waters of Cyprus’ in A. Carpenter, A. Kostianoy (eds) *Oil Pollution in the Mediterranean Sea: Part II. The Handbook of Environmental Chemistry*, volume 84 (Springer International Publishing AG, 2017) 229

¹³⁷ George Kirkos, George Zodiatis, Loizos Loizides, Marines Ioannou, ‘Oil Pollution in the Waters of Cyprus’ in A. Carpenter, A. Kostianoy (eds) *Oil Pollution in the Mediterranean Sea: Part II. The Handbook of Environmental Chemistry*, volume 84 (Springer International Publishing AG, 2017) 229

¹³⁸ George Kirkos, George Zodiatis, Loizos Loizides, Marines Ioannou, ‘Oil Pollution in the Waters of Cyprus’ in A. Carpenter, A. Kostianoy (eds) *Oil Pollution in the Mediterranean Sea: Part II. The Handbook of Environmental Chemistry*, volume 84 (Springer International Publishing AG, 2017) 229

¹³⁹ George Kirkos, George Zodiatis, Loizos Loizides, Marines Ioannou, ‘Oil Pollution in the Waters of Cyprus’ in A. Carpenter, A. Kostianoy (eds) *Oil Pollution in the Mediterranean Sea: Part II. The Handbook of Environmental Chemistry*, volume 84 (Springer International Publishing AG, 2017) 229

the society and also on the economy.¹⁴⁰ In order to minimise the oil exposure in the sea and refrain from marine pollution calamity, constant amelioration of the oil prevention and reaction abilities of Cyprus is essential. To achieve that goal is a fundamental investment in ‘monitoring assets, technological innovation and forecasting models’.¹⁴¹ In 2016, the World Banks Blog wrote an article regarding to ‘environmentally friendly shipping’.¹⁴² It is stated, an individual in his everyday life will buy something, either that would be food or anything else. That product in order to be sold, it needs to be transported from the place that was manufactured to the place where a consumer will go and buy it. That means that fuel will be used, even if transportation is through the sea, which is considered the most environmentally friendly way of transportation until now.¹⁴³ A ship, not only produce a large amount of air pollution but also may produce water pollution through oil spills.¹⁴⁴ Throughout time, shipping transportation has been

¹⁴⁰ George Kirkos, George Zodiatis, Loizos Loizides, Marines Ioannou, ‘Oil Pollution in the Waters of Cyprus’ in A. Carpenter, A. Kostianoy (eds) *Oil Pollution in the Mediterranean Sea: Part II. The Handbook of Environmental Chemistry*, volume 84 (Springer International Publishing AG, 2017) 229

¹⁴¹ George Kirkos, George Zodiatis, Loizos Loizides, Marines Ioannou, ‘Oil Pollution in the Waters of Cyprus’ in A. Carpenter, A. Kostianoy (eds) *Oil Pollution in Mediterranean Sea: Part II. The Handbook of Environmental Chemistry*, volume 84 (Springer International Publishing AG, 2017) 229

¹⁴² David Lawrence, ‘Green Sea Transport: creative approaches for environmentally friendly shipping’ (World Bank, 15 November 2016) <<https://blogs.worldbank.org/ppps/green-sea-transport-creative-approaches-environmentally-friendly-shipping>> accessed 3 June 2019

¹⁴³ David Lawrence, ‘Green Sea Transport: creative approaches for environmentally friendly shipping’ (World Bank, 15 November 2016) <<https://blogs.worldbank.org/ppps/green-sea-transport-creative-approaches-environmentally-friendly-shipping>> accessed 3 June 2019

¹⁴⁴ David Lawrence, ‘Green Sea Transport: creative approaches for environmentally friendly shipping’ (World Bank, 15 November 2016) <<https://blogs.worldbank.org/ppps/green-sea-transport-creative-approaches-environmentally-friendly-shipping>> accessed 3 June 2019

increased and made the international commerce a fundamental economic factor.¹⁴⁵

However, if the environmental problems caused by ships in the sea are not being handled properly, then, in the long run, the population will have big environmental impacts. Those effects have already started showing the climate changes and risks.¹⁴⁶

It is believed that there are a lot of approaches to diminish the natural effect of ocean transport. One of these ways is by improving fuel efficiency. Ships, in general, utilize a fuel which is ‘with high Sulphur content’.¹⁴⁷ If that fuel will be abridged, then the impacts that have in the environment will be phenomenal.¹⁴⁸

In a heavily forested province in eastern Canada, named Québec, the ferry ships which were using natural gas as a fuel, were expected to reduce their greenhouse gas emission by one fourth.¹⁴⁹ In order for that action to be successful and the ferry boats to continue to act in the same manner as before, it was introduced a new ideology which basically

¹⁴⁵ Business United Nations, ‘IMO (International Maritime Organization)’ (UN Business Action Hub, 2019) <<https://business.un.org/en/entities/13>> accessed 21 July 2019

¹⁴⁶ David Lawrence, ‘Green Sea Transport: creative approaches for environmentally friendly shipping’ (World Bank, 15 November 2016) <<https://blogs.worldbank.org/ppps/green-sea-transport-creative-approaches-environmentally-friendly-shipping>> accessed 3 June 2019

¹⁴⁷ David Lawrence, ‘Green Sea Transport: creative approaches for environmentally friendly shipping’ (World Bank, 15 November 2016) <<https://blogs.worldbank.org/ppps/green-sea-transport-creative-approaches-environmentally-friendly-shipping>> accessed 3 June 2019

¹⁴⁸ David Lawrence, ‘Green Sea Transport: creative approaches for environmentally friendly shipping’ (World Bank, 15 November 2016) <<https://blogs.worldbank.org/ppps/green-sea-transport-creative-approaches-environmentally-friendly-shipping>> accessed 3 June 2019

¹⁴⁹ David Lawrence, ‘Green Sea Transport: creative approaches for environmentally friendly shipping’ (World Bank, 15 November 2016) <<https://blogs.worldbank.org/ppps/green-sea-transport-creative-approaches-environmentally-friendly-shipping>> accessed 3 June 2019

the ships are using a wind propulsion system in order to minimise the need for fuels.¹⁵⁰

The trial which took place was successful and revealed that there will be a five per cent potential savings.¹⁵¹

An additional idea that can be used, is movement by electricity. For example, nowadays in 2019 maybe earlier, that car industry has introduced cars that are moving with electricity. The same ideology can be used for ships. Basically, the new approach is to issue an energy supply to the ships which are landed in the dock by connecting them into the electric grid.¹⁵² In order for that idea to take action it should be noted that plans are needed to be made and capital. If you are thinking ahead, you can also use renewable energy sources, such as the sun, wind and generating wave power by ‘placing equipment on the surface of the oceans that captures the energy produced by the wave movement and converts this mechanical energy into electrical power’¹⁵³.

Also, it is worth to consider that, ports are the fundamental entryway for a lot of nations trade system. The ports are crucial in many cities, countries, including Cyprus, United

¹⁵⁰World Maritime News, ‘Norsepower Starts Auxiliary Wind Propulsion System Sea Trials’ (World Maritime News, 2 December 2014) <<https://worldmaritimeneeds.com/archives/145234/norsepower-starts-auxiliary-wind-propulsion-system-sea-trials/>> accessed 30 August 2019

¹⁵¹ Jake Frith, ‘Wind Rotor for Ships’ (2015) <<https://www.maritimejournal.com/news101/comment-and-analysis/wind-rotor-for-ships>> accessed 30 July 2019

¹⁵² The United States Environmental Protection Agency, *Shore Power Technology Assessment at U.S. Ports* (EPA-420-R-17-004, 2017) 4

¹⁵³ Alain Clement, Pat McCullen, Antonia Falcao, Antonio Fiorentino, Fred Gardner, Karin Hammarlund, George Lemos ‘Wave energy in Europe: current status and perspectives’ (2002) *Renewable and sustainable energy reviews* 6, no 5, 405-431; Ocean Energy Europe ‘Wave Energy’ (2019) <<https://www.oceanenergy-europe.eu/ocean-energy/wave-energy/>> accessed 16 August 2019

States and United Kingdom.¹⁵⁴ A great emphasis was given in the last years on the globalization of trade and the transportation infrastructure needed to support it.¹⁵⁵ Some countries like the United States are building up an understanding Ports Initiative to investigate and recognise approaches to incentivise and assess technological systems and plans of action to limit discharges at ports.¹⁵⁶ One of the approaches to decrease such emissions at ports is utilising shore power innovation which enables the vessels to connect to 'electrical power sources on shore'.¹⁵⁷ Shore control advocates consider notable that as the power framework moves toward becoming cleaner and increasingly productive, the potential emanations decreases contrasted with assistant motors will develop.¹⁵⁸ Be that as it may, the expense of 'shore power electric generator and delivery', for not only the ships but also the terminal, can be essential.¹⁵⁹

However, accidents still happen and will always happen since this is inevitable. Ships collide with each other, cargo falls into the sea, so the next question that it should be asked is what the next step people should take in order to help safeguard the

¹⁵⁴ The United States Environmental Protection Agency, *Shore Power Technology Assessment at U.S. Ports* (EPA, 2017) 3

¹⁵⁵ Guido Bertucci, Adriana Alberti 'Globalization and the Role of the State: Challenges and Perspectives' (UN, 2003) 18

¹⁵⁶ Guido Bertucci, Adriana Alberti 'Globalization and the Role of the State: Challenges and Perspectives' (UN, 2003) 19

¹⁵⁷ The United States Environmental Protection Agency, *Shore Power Technology Assessment at U.S. Ports* (EPA, 2017) 3

¹⁵⁸ JRC SCIENTIFIC AND POLICY REPORTS, *Safety of offshore oil and gas operations: Lessons from past accident analysis* (2012)

¹⁵⁹ United States Environmental Protection Agency, *Shore Power Technology Assessment at U.S. Ports* (EPA, 2017) 3

environment. The cargo owners can also help the environment by using materials that are can be absorbed and dissolved by the sea in a small period of time. In order for that to happen, it should be passed a universal law stating that the materials used in products should be friendly to the environment. Sweden has already taken the first step towards the direction of reducing pollution towards the sea by creating a Clean Shipping Index.¹⁶⁰ The index empowers cargo owners to think about the natural effect of their tasks in their offering forms. Additionally, it gives valuable information that can be used as a point of references for Eco-friendly shipping.¹⁶¹

Another point to include is that because Cyprus has found natural gas, a drill ship was sent to begin drilling.¹⁶² That discovery raised the question as to what legislation applies in the case where an explosion takes place in the course of action and as a result that action will lead to an enormous environmental pollution. The response to that is enclosed in MARPOL, International legislation and European Commission.¹⁶³

Suggestions

In October 3rd, 2017, Rolls-Royce published in its official website, that it will ‘join forces with Google Cloud to help make autonomous ships a reality’. The purpose of

¹⁶⁰ Sofi Holmin-Fridell, Torbjorn Rydburgh, Dr. Erik Fridell, Capt. Daniel Berndof, Per Wimby ‘Clean Shipping Index’ (2019) <<http://www.cleanshippingindex.com/>> accessed 4 June 2019

¹⁶¹ Sofi Holmin-Fridell, Torbjorn Rydburgh, Dr. Erik Fridell, Capt. Daniel Berndof, Per Wimby ‘Clean Shipping Index’ (2019) <<http://www.cleanshippingindex.com/>> accessed 4 June 2019

¹⁶² Kathimerini Cyprus, ‘Exxon Mobil begins drilling’ (KNEWS, 16 November 2018) <<https://knews.kathimerini.com.cy/en/news/exxon-mobil-begins-drilling>> accessed 17 May 2019;

Kathimerini Cyprus, ‘Exxon reportedly discovers oil in Cyprus Block 10’ (KNEWS, 07 February 2019) <<https://knews.kathimerini.com.cy/en/news/exxon-discovers-oil-in-cyprus-block-10>> accessed 17 May 2019

that action is to evolve more the sensitisation of information.¹⁶⁴ That will have as an end goal to make the existing ships more secure and protected with the aim to minimise any accidental or deliberate accidents that are happening in the sea and saving lives.¹⁶⁵ Eva Fors, the Head of Google Cloud, declared that by investigating the conceivable outcomes introduced by artificial intelligence, Rolls-Royce can consolidate the most recent innovation head-ways with its profound learning of the sea business, at last carrying huge improvements to the sector.¹⁶⁶

Another key presented in that announcement is that by using its knowledge and expertise in the oceanic division, will be used to set up the necessary information to prepare models guaranteeing that it is pertinent and in adequate amount to create factual importance.¹⁶⁷ As part of the artificial intelligence learning process, the models' are assessed in viable marine applications, enabling the models to be further cultured.¹⁶⁸

¹⁶⁴ Rolls-Royce, 'Rolls-Royce joins forces with Google Cloud to help make autonomous ships a reality' (Rolls-Royce, 03 October 2017) <<https://www.rolls-royce.com/media/press-releases/2017/03-10-2017-rr-joins-forces-with-google-cloud-to-help-make-autonomous-ships-a-reality.aspx>> 8 September 2019

¹⁶⁵ Rolls-Royce, 'Rolls-Royce joins forces with Google Cloud to help make autonomous ships a reality' (Rolls-Royce, 03 October 2017) <<https://www.rolls-royce.com/media/press-releases/2017/03-10-2017-rr-joins-forces-with-google-cloud-to-help-make-autonomous-ships-a-reality.aspx>> 8 September 2019

¹⁶⁶ Rolls-Royce, 'Rolls-Royce joins forces with Google Cloud to help make autonomous ships a reality' (Rolls-Royce, 03 October 2017) <<https://www.rolls-royce.com/media/press-releases/2017/03-10-2017-rr-joins-forces-with-google-cloud-to-help-make-autonomous-ships-a-reality.aspx>> 8 September 2019

¹⁶⁷ Rolls-Royce, 'Rolls-Royce joins forces with Google Cloud to help make autonomous ships a reality' (Rolls-Royce, 03 October 2017) <<https://www.rolls-royce.com/media/press-releases/2017/03-10-2017-rr-joins-forces-with-google-cloud-to-help-make-autonomous-ships-a-reality.aspx>> 8 September 2019

¹⁶⁸ Rolls-Royce, 'Rolls-Royce joins forces with Google Cloud to help make autonomous ships a reality' (Rolls-Royce, 03 October 2017) <<https://www.rolls-royce.com/media/press-releases/2017/03-10-2017-rr-joins-forces-with-google-cloud-to-help-make-autonomous-ships-a-reality.aspx>> 8 September 2019

Ending, it is believed that ‘intelligent awareness systems will make vessels safer, easier and more efficient to operate by providing the crew with an enhanced understanding of their vessel’s surroundings.’¹⁶⁹ That announcement is one of the biggest advancements in the area of shipping until now, for that reason, other websites have published that information to spread the word.¹⁷⁰ This cooperation of Rolls-Royce and Google Cloud will minimize in time the sea pollution, from oil spills, wastes, air fumes and reduce to a big extent ship collisions.¹⁷¹

Cyprus published in its governmental side an interesting topic regarding reducing shipping greenhouse gas emissions. That topic was introduced and published in 2014 and the plan is to make an obvious change until 2050.¹⁷² In the draft published in 2014 of ‘The Low-Carbon Development Strategy of Cyprus’, it was stated that one of the

¹⁶⁹ Rolls-Royce, ‘Rolls-Royce joins forces with Google Cloud to help make autonomous ships a reality’ (Rolls-Royce, 03 October 2017) <<https://www.rolls-royce.com/media/press-releases/2017/03-10-2017-rr-joins-forces-with-google-cloud-to-help-make-autonomous-ships-a-reality.aspx>> 8 September 2019

¹⁷⁰ Irmak Aktan, ‘Google and Rolls-Royce: Partnering up to create autonomous drone vessels’ (More Than Shipping, 26 March 2018) <<https://www.morethanshipping.com/google-and-rolls-royce-partnering-up-to-create-autonomous-drone-vessels/>> accessed 8 September 2019; The Marine Executive, ‘Google and Rolls-Royce Partner On Autonomous Ships’ (The Marine Executive, 03 October 2017) <<https://www.maritime-executive.com/article/google-and-rolls-royce-partner-on-autonomous-ships>> accessed 8 September 2019

¹⁷¹ Irmak Aktan, ‘Google and Rolls-Royce: Partnering up to create autonomous drone vessels’ (More Than Shipping, 26 March 2018) <<https://www.morethanshipping.com/google-and-rolls-royce-partnering-up-to-create-autonomous-drone-vessels/>> accessed 8 September 2019; The Marine Executive, ‘Google and Rolls-Royce Partner On Autonomous Ships’ (The Marine Executive, 03 October 2017) <<https://www.maritime-executive.com/article/google-and-rolls-royce-partner-on-autonomous-ships>> accessed 8 September 2019

¹⁷² The Republic of Cyprus, *The Low-Carbon Development Strategy of Cyprus* (2014)

biggest challenges that mankind faces is the climate change. It is conveyed that countries from all around the world have come to an agreement under the United Nations' Framework Convention on Climate Change¹⁷³ where they 'work within the boundaries of the Framework Convention to coordinate measures for mitigation and adaptation to climate change'.¹⁷⁴

This Strategy is one of the main 'long term low-carbon developments' that the administration of the Republic of Cyprus has ever received.¹⁷⁵ The structure of that activity is being considered as an effect where the government will be associated with low-carbon advancement. The plan is going to be held under an evaluation in order to receive a new perspective on logical scientific information.¹⁷⁶ Any potential changes will be imparted to the European Commission as indicated by the prerequisites of Regulation 525, Article 13(1)(b) and the provisions in executing Regulation 749/2014.¹⁷⁷ This implementation of the new framework and legislation presented will benefit in general the environment and minimise at a very significant degree low-carbon.

5. Conclusion

This LLM dissertation, found as an interesting event to focus on shipping law, along with environmental damages that may be caused by ships, their issues and possible solutions. It is a case that concerns a number of people who find themselves affected on a daily basis by climate changes. A big problem that is causing such changes has

¹⁷³ 1992

¹⁷⁴ The Republic of Cyprus, *The Low-Carbon Development Strategy of Cyprus* (2014)

¹⁷⁵ The Republic of Cyprus, *The Low-Carbon Development Strategy of Cyprus* (2014)

¹⁷⁶ The Republic of Cyprus, *The Low-Carbon Development Strategy of Cyprus* (2014)

¹⁷⁷ The Republic of Cyprus, *The Low-Carbon Development Strategy of Cyprus* (2014)

been analysed and explained in this dissertation, focusing mainly on the legal aspect of the problem. This study took into account different laws, such as European and International law and gave an explanation of how Cyprus and Great Britain react in a situation of oil spills in the sea. It also gave a great attention to what legislation is being used in those two countries and as to whether that legislation is similar or even the same. This essay has focused its attention on current events that are affecting the globe, especially now. It is noteworthy to express, that it is undoubtable that the world needs a strong creating transportation industry to keep items on the racks and drive worldwide money related progression.¹⁷⁸ Notwithstanding, that it should be able to guarantee that the establishment of the sea transportation structure is permissible and strong to any atmosphere risks.¹⁷⁹

For that reason, it should be stated again that sea transport is fundamental to the world's economy as over 90% of the world's trade system is conveyed by the sea. Until now it is the most financially savvy approach to move all products at once and crude materials around the globe.¹⁸⁰ However, such transportation has consequences for the environment. Some of those consequences are being referred by MARPOL Annexes, where they consider oil spill pollution in the sea, air pollution caused by ships, goods

¹⁷⁸ David Lawrence, 'Green Sea Transport: creative approaches for environmentally friendly shipping' (World Bank, 15 November 2016) <<https://blogs.worldbank.org/ppps/green-sea-transport-creative-approaches-environmentally-friendly-shipping>> accessed 3 June 2019

¹⁷⁹ David Lawrence, 'Green Sea Transport: creative approaches for environmentally friendly shipping' (World Bank, 15 November 2016) <<https://blogs.worldbank.org/ppps/green-sea-transport-creative-approaches-environmentally-friendly-shipping>> accessed 3 June 2019

¹⁸⁰ Business United Nations, 'IMO (International Maritime Organization)' (UN Business Action Hub, 2019) <<https://business.un.org/en/entities/13>> accessed 21 July 2019

thrown by cruise ships in the sea etc.¹⁸¹ The International Maritime Organisation also plays a crucial role in the shipping industry as it aims to have safe and effective shipping in clear waters in the whole world.¹⁸² Meaning that its goal is to eliminate sea pollution and promote international trade shipping.

Moreover, it shall be guaranteed that the establishment of the sea transportation system is supportable and strong to atmospheric dangers. It is a positive sign that there are thoughts attempting to keep the sea clean. Presently the primary concern that is required, are people who will put aside the attempts to research such views and actually make them an action. It is time now more than ever to make thoroughgoing thoroughgoing upgrades and help the planet in every possible way.

For that particular reason, people, nations and continents have been brought together and they are trying to formulate a system where such accidental or deliberate sea pollution actions, will not be any longer tolerable.¹⁸³

To conclude, as it was stated in the introduction, countries nowadays are trying to have a united front to deal with the problem of environmental damage, especially in the sea. As it was stated in the previous paragraphs regarding the United Kingdom and Cyprus law, both countries they exercise the MARPOL regulations and annexes,¹⁸⁴ and the international maritime law¹⁸⁵. In addition to that, both countries have taken into account

¹⁸¹ Jeff B. Curtis, 'Vessel-source oil pollution and MARPOL 73/78: an international success story' (1984) *Envtl. Law* 15, 679

¹⁸² Business United Nations, 'IMO (International Maritime Organization)' (UN Business Action Hub, 2019) <<https://business.un.org/en/entities/13>> accessed 21 July 2019

¹⁸³ Michael Waldichuk, 'Control of Marine Pollution: An essay review' (1977) *Ocean Development & International Law* 4(3), 280

¹⁸⁴ MARPOL 73/78

¹⁸⁵ UNCLOS 1982, article 221(1)

the European law as both of them are still members of the European Union. Cyprus, as well as the United Kingdom, has its own domestic legislation that they adopt accordingly in agreement with the International Maritime Organisation and international legislations to bring out the best possible result not only for their own benefit but for the common good.¹⁸⁶ The best possible solution for the problem of pollution in the environment but especially at sea is to create a strong legal base which will be universal with no consideration of territorial waters or the country that the event occurred.¹⁸⁷ It is time for the world to become as a whole in more than one ways. Meaning that the nations are time to work together and put aside their differences, in order to minimise the sea pollution.¹⁸⁸

Ending, this dissertation by using secondary and primary legislation, showed that Cyprus and the United Kingdom, even though there are two different countries, even though both of them are located in different seas, have as a common purpose to minimise the pollution at the ocean. Therefore, both countries adopted international legislation and the guidance given by MARPOL, in order to achieve that purpose. Also, it is worth mentioning that both of these countries have their own domestic law and they use that law along with international law to have a better legal outcome. It is

¹⁸⁶ Nuwan Suriyagoda, 'How can we accommodate climate related risks in infrastructure' (World Bank, 10 May 2016) <<https://blogs.worldbank.org/ppps/how-can-we-accommodate-climate-related-risks-infrastructure>> accessed 1 August 2019

¹⁸⁷ Nuwan Suriyagoda, 'How can we accommodate climate related risks in infrastructure' (World Bank, 10 May 2016) <<https://blogs.worldbank.org/ppps/how-can-we-accommodate-climate-related-risks-infrastructure>> accessed 1 August 2019

¹⁸⁸ Nuwan Suriyagoda, 'How can we accommodate climate related risks in infrastructure' (World Bank, 10 May 2016) <<https://blogs.worldbank.org/ppps/how-can-we-accommodate-climate-related-risks-infrastructure>> accessed 1 August 2019

significant to say that Cyprus once was under the occupation of Great Britain and as such it has adopted some of the British legislation; however, it amended it as it saw fit at the time. Concluding, both countries have many similarities in regards to how they act and apply their rules and legislation where sea pollution is presented, either by oil spills, waste, or any other contamination exists.

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- International Maritime Organization 1948
- International Seabed Authority 1994
- International Whaling Commission 1946
- MARPOL 73/78
- Merchant Shipping Notice 1819
- Resolution Marine Environment Protection Committee 1984
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- Resolution Marine Environment Protection Committee 2012
- Solid and Dangerous Waste Law 215(I)/2002
- The Agreement Between Cyprus, Israel and Egypt for Cooperation in Combating Major Marine Pollution Incidents in the Mediterranean Law of 2001, Law 21(III)/2001
- The International Convention for the Control and Management of Ships' Ballast Water and Sediments 2004
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