UNIVERSITY OF PIRAEUS
Department of International & European Studies
MSc in Energy: Strategy, Law and Economics

The Law of the Sea and the Role of International Institutions in Promoting Arbitration and Sustainable Legal Frameworks for Offshore Wind Energy Development

Master Thesis

to obtain the academic degree of

"*Master of Science in Energy: Strategy, Law and Economics*"

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Athens, Greece

July 2024

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Acknowledgements

This diploma thesis is an endeavour within the framework of the postgraduate program "*MSc in ENERGY: STRATEGY, LAW & ECONOMICS*", of the department of International and European studies of the University of Piraeus.

Before presenting the results of this thesis, I wish to express my sincere gratitude to my supervisor, Professor Petros Liacouras, whose deep expertise nurtured my passion for the Law of the Sea. I am grateful for his invaluable guidance and unwavering support throughout this process. I would also like to thank the members of the Committee, who dedicated their time to give me their useful advice.

Last but not least, I want to extend my heartfelt gratitude to my family and friends, especially, my mother, Vassiliki, Eleni, and Nikolas, for their love, understanding and patience at moments when I was frustrated, at times when they believed in me more than I believed in myself.

To my mother,

whose love and support made this endeavour possible

Abstract

Driven by escalating concerns about climate change, the energy market is witnessing a profound global shift towards more sustainable energy solutions. Offshore wind energy has emerged as a pivotal component driving sustainable development in many coastal states. Its growth, however, is hindered by significant challenges, especially in semi-enclosed seas, such as the Mediterranean.

The United Nations Convention on the Law of the Sea defines jurisdictional boundaries for coastal states, which impact the installation and operation of the offshore wind projects, while also establishing guidelines for environmental protection and sustainable use of marine resources. International institutions, such as the International Energy Agency and the International Maritime Organisation, also provide crucial standards for the global growth of the offshore wind industry. These institutions shall contribute to the development of offshore wind energy by sharing practices and knowledge to promote safety, environmental protection, and international cooperation.

Overall, this endeavour aims to contribute to the comprehension of the evolving energy sector and the emerging need of offshore wind energy development. An in-depth analysis of the provisions regarding the installation, operation and use of offshore wind resources under the Law of the Sea is undertaken. By evaluating the role of international institutions in promoting sustainable investment legal frameworks, it is suggested that arbitration is the best refuge for conflicts and disputes arising within the context of International and Investment Law. This research process eventually aims to apply its findings to the case of Greece and suggests that, given the particularly complex nature of the energy market, it is critical to develop a secure and transparent legal and regulatory framework to attract and sustain - foreign - investor confidence.

Table of Contents

I. List of Figures

II. List of Abbreviations

ECJ	European Court of Justice
ECT	Energy Charter Treaty
EEZ	Exclusive Economic Zone
EU	European Union
GHG	Greenhouse Gases
GW	Giga Watt
HEREMA	Hellenic Hydrocarbons and Energy Resources Management Company
ICJ	International Court of Justice
ICSID	International Centre for the Settlement of Investment Disputes
IEA	International Energy Agency
IMO	International Maritime Organisation
IRENA	International Renewable Energy Agency
ITLOS	International Tribunal for the Law of the Sea
LOSC	1982 United Nations Convention on the Law of the Sea
nm	nautical mile
NECP	National Energy and Climate Plan
PCA	Permanent Court of Arbitration
RAEEY	Regulatory Authority for Energy, Waste and Water
RES	Renewable Energy Sources
TFEU	Treaty on the Functioning of the European Union
UK	United Kingdom
UN	United Nations
UNCLOS	United Nations Conferences on the Law of the Sea
UNCLOS III	Third United Nations Conference on the Law of the Sea
US	United States

1. Introduction

In the late 20th century, concerns about environmental deterioration and climate change became more urgent and the concept of a "green transition" started to take off. This shift was driven by the realisation of the risks associated with continued reliance on fossil fuels raising awareness of the need for alternative energy sources. Public support for environmental protection further accelerated the transition to a greener future.

International organizations have a significant impact on governments, influencing their credibility, policies, and modes of governance. In terms of green transition, international agreements and milestones have established global targets for reducing carbon emissions. The 1997 Kyoto Protocol set binding emission reduction targets for developed countries, while the 2015 Paris Agreement aimed to pursue efforts to limit global warming to 1.5°C.The Cop 28 United Nations Climate Change Conference may not have resulted in a clear statement on the phasing out of fossil fuels, but it did decide on moving away from them by accelerating action in this critical decade to achieve climate neutrality by 2050. The question to be answered is exactly why international institutions shall contribute even more towards green transition. The answer is not simple, but it is undoubtedly based on the relationship between international institutions and states.

At the European Union level, the EU has progressively strengthened Europe's transition to a low-carbon society, by updating its rules to facilitate the necessary private and public investment in the clean energy. The EU is currently aiming to increase the share of renewables in the EU's overall energy consumption, raising the binding target for 2030 to 42.5%, bolstered also by initiatives like the REPowerEU plan to accelerate the clean energy transition and reduce dependency on Russian fossil fuels.

Hence, an increasing number of countries are aiming to fulfil their climate change commitments, by setting a path towards climate neutrality by 2050. In view of this, national policies and strategies have been implemented to encourage sustainable practices.

This trend has led to an upward demand for renewable energy sources (RES), and particularly the rapid expansion of offshore wind projects. Offshore wind energy can – and should – substantially contribute to diversifying the energy mix, enhancing energy security, and mitigating climate change by replacing fossil fuel-based electricity generation. Due to its significant potential to generate massive amounts of electricity in areas with consistent and strong wind resources, this source of energy shall deserve major consideration.

However, the industry faces many challenges that must be overcome. Offshore wind projects require not only expertise, infrastructure, and capital, but also stable and reliable legal,

regulatory, and licensing framework. Attracting foreign investors and fostering partnerships and joint ventures in the wind industry cannot be achieved without these prerequisites.

While the United Nations Convention on the Law of the Sea provides some general guidelines concerning the construction, operation, and use of offshore wind parks, in cases of seas such as the Aegean and Mediterranean, it does not offer a concrete solution. In view of this, international institutions shall foster international cooperation and establish robust legal and regulatory frameworks regarding safety, environmental protection, and sustainability for the efficient and inclusive development of the industry. Potential disputes and conflicts arising between states and private parties shall be resolved through alternative dispute resolution methods, such as arbitration, which shall be actively promoted for these projects.

In the case of Greece, offshore wind farms have the potential to enhance the state's energy independence and transform the country into a clean energy exporter, strengthening its economy and geostrategic position. Above all, offshore wind farms can generate substantial amounts of clean energy necessary to address the climate change and achieve climate neutrality. Therefore, implementing a clear and transparent legal framework and streamlining the licensing process can build confidence in the industry, encouraging investments and collaborations in the region.

2. The Renewable Renaissance

2.1 The Rise of Renewable Sources of Energy

The world is entering a new era characterised by technological advancements, financial incentives, and concerns about climate change. All these have paved the way for the development of RES[1]. Wind, solar, hydroelectric power, and geothermal energy offer significant advantages over the so-called conventional energy sources. Not only are they almost inexhaustible, but they also do not harm the environment[2].

In this process, electrification is a very important dimension. Electricity used to be the principal source of energy-related greenhouse gas (GHG) emissions. To illustrate, in 2017, two thirds of the world's electricity was generated through fossil fuel combustion, and half of this was produced in coal-fired power plants. Now, efforts converge towards the promotion of electricity produced from RES, supporting international trade, and climate change mitigation. Hence, the sector's decarbonisation has consequently become a prominent focus on climate change agendas.

The achievement of green electricity will mean climate neutrality, more clean air and lower noise in the cities. This transformation requires storage and resilient infrastructure to combat climate change. Characteristic example is the phenomenon Daniel in Thessaly Greece that drove many RES projects to collapse[3].

At the European Union level, energy markets have been subject to continuous sets of directives and regulations that aim at, inter alia, ensuring sustainability, security and competitiveness in energy supplies in and to the EU. The first effort Directive 2009/28/EC[4] on the promotion of renewable energy sources was a key instrument in establishing obligatory national targets in this sector. Building on the 20% target for 2020, the recast Renewable Energy Directive 2018/2001/EU[5] established a new binding renewable energy target for the EU for 2030 of at

[1] According to the definition in Article 2(2) of Law 3468/2006 (Government Gazette A΄129/27.6.2006), RES are considered to be "non-fossil re-newable energy sources such as wind energy, solar energy, wave energy, tidal energy, biomass, gases emitted from landfills and sewage treatment plants, biogases, geothermal energy, hydraulic energy uti-lized by hydroelectric power stations.

[2] Papantoni M., The Law of Energy, Nomiki Bibliothiki Publications, Athens 2003, p. 225.

[3] Dimitriou E., Efstratiadis A., Zotou I., Papadopoulos A., Iliopoulou T., Sakki G-K., Mazi K., Rozos E., Koukouvinos A., Koussis AD, Post-Analysis of Daniel Extreme Flood Event in Thessaly, Central Greece: Practical Lessons and the Value of State-of-the-Art Water-Monitoring Networks, Water. 2024, 16(7):980, https://doi.org/10.3390/w16070980

[4] Directive 2009/28/EC of the European Parliament and of the Council of 23 April 2009 on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC (no longer in force), https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX:32009L0028

[5] Directive (EU) 2018/2001 of the European Parliament and of the Council of 11 December 2018 on the promotion of the use of energy from renewable sources, https://eur-lex.europa.eu/eli/dir/2018/2001/oj

least 32%. To meet the higher climate ambitions set forth in the European Green Deal[6] in 2019, further revisions of the directive were required. In 2022, the European Commission introduced the REPowerEU plan[7], aiming to rapidly reduce the EU's dependence on Russian fossil fuels well before 2030 through the acceleration of the clean energy transition. The REPowerEU plan focused on three key pillars: saving energy, clean energy production, and diversification of the EU's energy supplies. In 2022, the Council adopted a temporary emergency regulation, following a Commission proposal, to accelerate the permit-granting process for renewable projects and facilitate power purchase agreements. In 2023, the revised Renewable Energy Directive EU/2023/2413[8] raised the EU's binding renewable energy target for 2030 to a minimum of 42.5%, up from the previous target of 32%, with the ambition to reach 45%.

By investigating the feasibility of providing global energy from wind, water, and sunlight[9], it was revealed that the obstacles to realising this plan are not technological or economic, but social and political. Energy has always been a key driver of the political landscape. Factors such as climate change, pollution and increased environmental awareness have underscored the importance of energy security, encompassing availability, affordability, accessibility, and acceptability. These concerns have prompted significant actions in the energy sector. In 2022, for instance, energy investments worldwide reached $2,393 billion, reflecting a strong commitment to renewable energy despite the global energy crisis. Political volatility has arisen from the gap between resource-endowed and demand centers countries, historically managed by state-owned, vertically integrated companies, with exclusive rights in the production, supply, transmission, and distribution of energy products. This market structure is evolving toward an integrated community-wide energy market, reducing monopolies, and pursuing cost-effective decarbonisation.

2.2 The Current Landscape and Tomorrow's Pathways

Climate change is undoubtedly a global enemy and there are two policies that should be applied worldwide: mitigation and adaptation. States are investing more and more in renewable power and see it as part of their geopolitical response to the challenges of energy security and economic competitiveness. RES development and promotion is pivotal not only for the global energy transition, but also for achieving net zero emissions, energy security, and regional

[6] https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/european-green-deal_en
[7] https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/european-green-deal/repowereu-affordable-secure-and-sustainable-energy-europe_en
[8] https://eur-lex.europa.eu/eli/dir/2023/2413/oj
[9] Jacobson M.Z. and Delucchi M. A., "Providing all global energy with wind, water, and solar power, Part I: technologies, energy resources, quantities and areas of infrastructure, and materials", Energy Policy, 39(3) (2011), 1154-69, https://www.sciencedirect.com/science/article/abs/pii/S0301421510008645

cooperation. Fossil fuel companies have also started to be part of this process and invest in clean technologies. In the meantime, the role of natural gas as a transitional bridge fuel has been reconsidered.

Additionally, the future leads us to interconnection to increase the reliability of energy supply. Through transmission lines, RES from remote locations will be harvested with also low production costs. It is worth noting the efforts for the interconnection of Mediterranean states with Europe, something that will enable transferring renewable energy to the major load centers. Initiatives such as «*Gobitec*»[10] in Asia and Atlantic Wind Connection[11] in the US aimed to interconnect the Asian power grids or transmit offshore wind energy to the US east coast. Studies in Europe, US and Asia conclude that storage and increased interconnection capacity are major factors contributing to the balancing of RES variability and load. Storage is very important and should be considered as an alternative or as a complement to long interconnections, especially when most of the supply comes from remote wind farms. In the coming years, the efficient integration of increasing shares of RES and the need to satisfy growing electricity demand in many parts of the world are expected to lead to the gradual integration of national, regional, and eventually inter-regional grids. This will occur in parallel with the development of mechanisms designed to cope with decentralised energy production.

[10] www.gobitec.org
[11] www.atlanticwindconnection.com

3. Blowing in the Right Direction

The unprecedented challenge of global warming requires the decarbonisation of the electricity sector to be achieved through a rapid and substantial shift to RES. The energy in the oceans shall contribute to this shift. The key renewable marine energies are wind, wave, tidal, and ocean current energy, ocean thermal energy conversion, osmotic power[12].

In this chapter, it will be explained why the development of offshore wind energy should be given particular attention, highlighting its potential to significantly contribute to the green process and meet the growing demand for sustainable electricity.

3.1 Case Studies of Successful Offshore Wind Projects

Until now, the expansion of RES, such as wind and solar power, has mainly taken place onshore, whereas the energy in the oceans has remained largely untapped. In view of the increasing global demand for electricity and the need for renewable production, things are changing.

The production of offshore wind energy, for example, is now being promoted worldwide, and as can be seen, expectations are high. Based on the published wind data, as of January 2023, there were a total of 105 wind farms operating in China, the country with the largest number of offshore wind farms in the world. It is evident that its power capacity has increased more than that of any other nation in the last years.

The United Kingdom is also a global leader in offshore wind, boasting roughly 20% of global offshore wind capacity, with 13.7GW fully operational in 2022. The Offshore Wind Sector Deal, signed in 2019, targeted 30GW by 2030. However, the government soon thereafter increased the ambition to 50GW to meet the target for net-zero GHG emissions by 2050 pursuant to the Climate Change Act 2008. The world's four largest operational wind farms are based in the UK, while just in 2022 the UK installed 300 new offshore wind turbines[13]. It is also worth mentioning the example of the offshore wind farm Dogger Bank, being developed and built by a joint venture. It is the world's largest offshore wind farm demonstrating the best of what the offshore wind industry can offer, with innovative technologies, long-term jobs, economic growth and security of electricity supply at a major scale. But Dogger Bank is also a landmark for the global offshore wind industry, demonstrating just what can be achieved when

[12] https://worldoceanreview.com/en/wor-1/energy/renewable-energies/

[13] Alexiou E., ReedSmith, Offshore wind investment: a final warning for the UK?, 2023, https://www.reedsmith.com/en/perspectives/2023/10/offshore-wind-investment-a-final-warning-for-the-uk

policymakers, investors, industry, and communities work together to achieve something truly remarkable[14].

Germany has also been actively expanding its offshore wind capacity in the North and Baltic Seas. Notable projects include the BARD Offshore 1 and Baltic Eagle wind farms.

As per current available data, Denmark's latest offshore wind auction could award enough capacity to meet the country's entire electricity demand[15]. Wind power is one of the most widespread kinds of renewable energy in this country, which led the world in building the first offshore wind farm in 1991 (Vindeby Offshore Wind Farm, 11 turbines). Danish has ambitious plans to significantly increase offshore wind capacity by 2030 and become a hub for offshore wind energy in the North Sea region.

The Netherlands has been investing in offshore wind energy, with several offshore wind farms in operation and planned. Projects like Borssele Offshore Wind Farms are part of the Dutch government's efforts to increase offshore wind capacity.

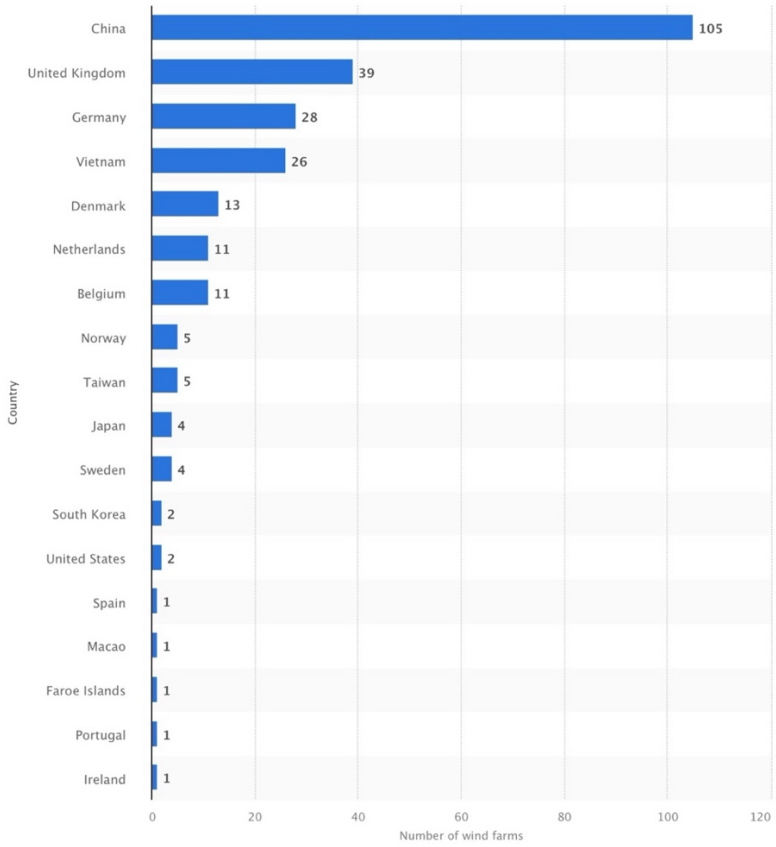

Figure 1: Number of offshore wind farms operating worldwide as of January 2023 by country (Source: https://www.statista.com/statistics/report-content/statistic/264257)

[14] Equinor, World's largest offshore wind farm Dogger Bank produces power for the first time, 2023, https://www.equinor.com/news/202310-dogger-bank

[15] https://windeurope.org/newsroom/news/denmarks-latest-offshore-wind-auction-could-award-enough-capacity-to-meet-the-countrys-entire-electricity-demand/

It is also worth stating that during the first months of 2023, Europe had installed 2,144 GW of offshore wind, and, in June 2024, Europe's share of wind energy in electricity demand marked 11.0%, with the share of offshore wind 0.7% (48 GWh)[16]. Offshore wind additions are set to hit a new high in 2024. Capacity is expected to rise 10-fold by 2040, reaching 742 gigawatts worldwide.

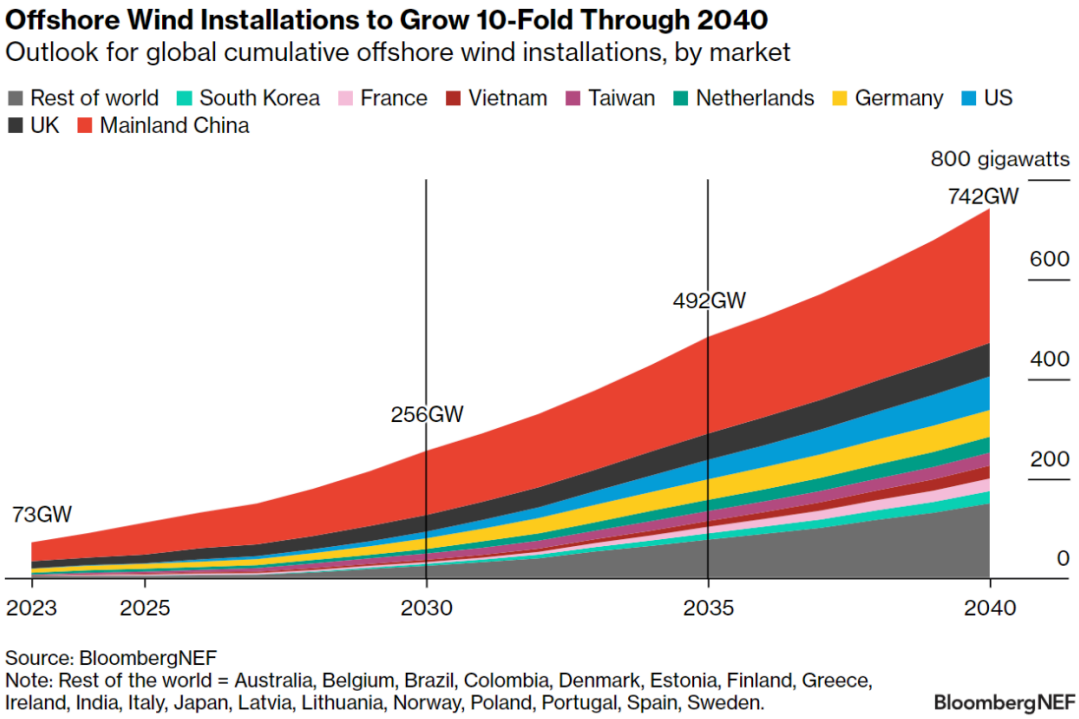

Figure 2: Offshore Wind Installations to Grow 10-Fold through 2040
(source: BloombergNEF, 2024, available at https://about.bnef.com/blog/1h-2024-offshore-wind-market-outlook-course-correct/)

3.2 Advantages of Offshore Wind Energy

Offshore wind benefits are as abundant as the sea breeze. Countries with high ocean energy potential are more likely to gain a more important geopolitical role in the future and have better growth prospects in comparison with others. This statement can be largely attributed to the fact that wind, waves and currents together contain 300 times more energy than humans are currently consuming. However, wave and currents energy devices are costly, so it is worth

[16] https://windeurope.org/about-wind/daily-wind-archive/2024-06-20/

investing in offshore wind energy rather than in waves and currents. Hence, offshore wind power has become more cost-competitive and this can be attributed to the advancements in turbine technology and economies of scale achieved through larger projects. Government incentives and improved installation techniques have further reduced costs. Additionally, a more mature supply chain and innovative financing models have made investment in offshore wind energy more attractive.

Additionally, offshore wind energy offers the potential for large-scale energy production. Coupled with the ability to harness strong and consistent wind patterns at sea, it is a key player in meeting increasing electricity demands. Moreover, it can facilitate the efficient integration of national, regional, and inter-regional grids, supporting the transition to a decentralised and sustainable energy system.

Furthermore, the development of floating platforms is considered as the most influential driver of change, opening new areas for offshore wind development. Larger and more efficient turbines are now capable of being deployed in deep waters where traditional fixed-bottom turbines could not be used. Floating platforms provide the promise for offshore wind power in the deeper waters, further from shore, where wind speeds are higher and more consistent. The first operational farm since 2017 with floating wind turbines was Hywind Scotland, in depths of 312 to 394 feet, while a second farm (at a depth of 320 feet) off the Atlantic coast with larger floating turbines has been providing electricity to Portugal's grid since January 2020. This technological advancement is of high importance for countries, such as Greece, with great potential for offshore wind, but rugged terrain of seabed that make it challenging to identify areas of suitable depth. Therefore, floating wind farms, which are not dependent on a specific water depth, offer the advantage of increasing the sea areas available for their installation, especially in countries with limited shallow waters. Moreover, they provide an efficient solution to the increasing scarcity of available suitable areas onshore. Locating them far from the shore implies a reduction in visual disturbance, facilitating coexistence with other marine uses (fishing, navigation), exploiting a more powerful and stable wind potential found at greater depths, and eliminating the ground morphology impact experienced in onshore wind development, thus reducing turbulence and improving the exploitation of available energy.

3.3 Challenges & Barriers

Although this source of energy offers significant benefits, as previously mentioned, it is not without several drawbacks that demand careful consideration and management.

First of all, it must be conceded that wind energy is intermittent and totally determined by the weather. Therefore, countries should invest in different interconnection paths, ensuring also a backup source to accommodate fluctuations in wind output as largescale storage technologies are not yet commercially available.

Furthermore, multiple marine uses of coastal waters overlap with offshore energy sites: fishing, commercial shipping, recreation, and naval–coast guard operations. Farms, especially in waters with high marine traffic, pose challenges to marine safety, environmental protection, and maritime mobility. Adopting sustainable practices and safety zones are essential for responsible investment and minimising potential impacts. This is important because, as wind farms move further from the coast, the more likely they are to be found on the open sea, necessitating both extensive areas and longer distances for power transmission cables[17]. Indeed, the presence of offshore wind farms complicates the laying of communication cables[18], posing risks due to seabed disturbance caused by continuous turbine motion and base erosion. A notable example is the 2011 Memorandum of Understanding between the UK and Ireland governments[19], which aimed at coordinating the installation and monitoring of offshore energy farms.

Additionally, fluctuations caused by climatic conditions are strong[20] and the integration of increasing shares of renewable energy electricity is therefore dependent upon the reinforcement of transmission interconnectors and the extension of grids over larger regions[21].

One other significant challenge that should not be underestimated is the financial barrier posed by the high costs of offshore wind projects, especially regarding the expenses of specialist equipment, installation, and maintenance. While costs have decreased, they remain substantial. Countries with significant offshore wind resources see an opportunity to share infrastructure costs to bring their resources to market. Probably the most important contribution of EU (especially German) renewable energy policy has been to create a market for new renewable technologies. This in turn has driven down prices for equipment such as wind turbines, often produced in China and other emerging countries. In view of this, it has been reported that the cost of wind turbines had fallen by 30%.

It must be noted that local communities are usually opposed to offshore projects due to their impact on the landscape and the noise they create. Although there is evidence that an offshore

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[17] OSPAR Commission, Assessment of the environmental impact of offshore wind-farms, 2008

[18] Scot Coffen-Smout & Glen J. Herbert, Submarine cables: A challenge for ocean management, 24 Marine Policy 2000, 441-448; Tara Davenport, Submarine communications cables and the Law of the Sea, 43 ODIL 2012, 201-242; Robert Waygo & Tara Davenport, Protecting submarine cables from competing uses, in Burnett, Beckman & Davenport (eds.)

[19] https://www.gov.uk/government/publications/energy-transition-uk-ireland-memorandum-of-understanding

[20] Cottier T. and Espa I., International trade in sustainable electricity: regulatory challenges in international economic law, Cam-bridge University Press, 2017, p. 3.

[21] Sauvage J. and Bahar H., Cross-border trade in electricity and the development of renewables-based elec-tric power, OECD Trade and Environment Working Papers, 2013

wind farm located several kilometres from the shore might not be visible and its noise can be covered by the sound of the sea, there might still be an impact on the local population. There is also mixed evidence on the impact of offshore wind farms on tourism. Offshore wind farms construction, operation, and decommissioning can have negative consequences for the local environment, such as harming birds and marine life. To quantify the effect of offshore investments on the local environment, the existing literature considers individuals' willingness to pay to protect fauna and flora from wind turbines.

Last but not least, these projects involve significant long-term investments and complicated regulatory environments.

4. The role of International Institutions

International institutions play a substantial role in the development of International Law and practice in the field of energy, and the activities of many international organisations, from the United Nations to the World Bank and the European Union, have a clear impact on the strategy, law, and economics of energy.

Climate change is every country's problem, but developing countries need, and have been vocal in calling for, the support of those who have benefitted most from fossil fuel wealth to help fund their own transition and development. Without this, they are unlikely to be able to beat a new path to renewables-based development for the benefit of all. Unless developing nations receive international support, their energy transitions will be far too slow.

The aim of this chapter is to prove that the international institutions are the cornerstones for the promotion of RES and the establishment of a stable and sustainable framework for offshore wind energy by providing resources, expertise, and advocacy at both the international and regional level. The relationship between international institutions and states is crucial, particularly as the world's divide remains unbridged and in view that each state has different priorities and "mentality".

4.1 United Nations

The United Nations is an international organisation founded in 1945. Currently made up of 193 Member States and guided by the principles enshrined in its founding Charter, the UN aims "*to establish conditions under which justice and respect for the obligations arising from treaties and other sources of International Law can be maintained*". Among its core goals are maintaining international peace and security, protecting human rights, supporting development and climate action, and upholding International Law[22]. In the context of analysing the UN's role, it is also necessary to distinguish between the International Substantive Framework and International Jurisprudence.

4.1.1 International Substantive Framework

This framework concerns the UN's Conventions and Treaties related to the climate crisis and the protection of the marine environment. International Substantive framework can – and shall

[22] https://www.un.org/en/our-work/uphold-international-law

– significantly contribute to the international legal and policy architecture addressing climate change, marine environment issues, and the sustainable development of renewable energy sources like offshore wind by establishing standards, providing guidelines, and promoting international cooperation and peace.

- 1982 United Nations Convention on the Law of the Sea (LOSC)

The 1982 United Nations Convention on the Law of the Sea[23] (LOSC) lays down a comprehensive regime of law and order in the world's oceans and seas, establishing rules governing all uses of the oceans and their resources. It is a multilateral treaty concluded under the auspices of the United Nations and resulted from the Third United Nations Conference on the Law of the Sea (UNCLOS III), which took place between 1973 and 1982. The Convention, together with the Final Act of the Conference, was opened for signature on 10 December 1982 in Montego Bay, Jamaica, and entered into force on 16 November 1994[24] upon deposition of the 60th instrument of ratification according to Article 308.

The significance of LOSC stems from the fact that it defines, systemizes and codifies the standards and principles of International Maritime Law, inherited from Customary International Law relating to maritime affairs and are expressed primarily in the United Nations Charter and current International Maritime Law norms, such as the Geneva Conventions of 1958[25]. The Convention also created the International Court of the Law of the Sea, competent to hear disputes relating to the interpretation and application of that treaty.

Part XII of LOSC establishes an affirmative and overarching obligation to *'protect and preserve the marine environment*' (Article 192), adopting measures, laws, and regulations to '*prevent, reduce, and control'* all sources of pollution of the marine environment (Article 194(1)). The issue of pollution is addressed in line with *'internationally agreed rules, standards and recommended practices*' (Article 212). These measures must include *'those designed to minimize to the fullest possible extent*' the pollution from vessels or installations at sea (Article 194(3)).

Pursuant to the aforementioned provisions, the law of the sea regime can and should serve as a proper framework for evaluating States' actions and inactions, both domestically and internationally. This includes actions related to the development of offshore wind energy.

- United Nations Framework Convention on Climate Change (UNFCCC)

[23] Available at https://www.un.org/depts/los/convention_agreements/texts/unclos/unclos_e.pdf
[24] https://www.unclos.org
[25] https://legal.un.org/avl/ha/gclos/gclos.html

The United Nations Framework Convention on Climate Change (UNFCCC)[26] entered into force on 21 March 1994 and 198 countries are Parties to the Convention. Borrowing a crucial principle from one of the most successful multilateral environmental treaties in history, the Montreal Protocol in 1987, UNFCCC bound member states to act in the interests of human safety even in the face of scientific uncertainty, preventing "*dangerous*" human interference with the climate system[27]. In other words, the ultimate aim of the Convention is to stabilise greenhouse gas concentrations "*at a level that would prevent dangerous anthropogenic interference with the climate system*." The Convention shifts the onus on developed countries to lead the way, as they are the source of most past and current greenhouse gas emissions. Many industrialised countries have supported climate change activities by providing financial support and sharing technology with developing countries.

In view of this concrete effort, it is evident that UNFCCC can promote collaboration between states, bridge the gap among them, and guide policy decisions related to RES.

- Kyoto Protocol

The Kyoto Protocol[28] was adopted on 11 December 1997, entered into force on 16 February 2005, and, currently, has 192 Parties[29]. In 2012, the Doha Amendment to the Kyoto Protocol was adopted, and entered into force in 2020.

In short, the Protocol operationalises the UNFCCC by committing industrialised countries to reduce GHG emissions in accordance with agreed individual targets. Based on the principles of the Convention, the Kyoto Protocol binds only the developed countries to adopt policies and measures on mitigation, placing a heavier burden on them under the principle of "*common but differentiated responsibility and respective capabilities*", recognising that they are largely responsible for the high levels of GHG emissions in the atmosphere.

One important element of the Kyoto Protocol was the establishment of flexible market mechanisms, based on the trade of emissions permits. Countries must meet their targets primarily through natural measures, but they are also offered three market-based mechanisms: a) International Emissions Trading, b) Clean Development Mechanism, and c) Joint Implementation. The Protocol established a rigorous monitoring, review and verification system, as well as a compliance system to ensure transparency and hold Parties to account. The Adaptation Fund was established to finance adaptation projects and programmes in developing countries Parties to the Protocol.

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[26] Available at https://unfccc.int/resource/docs/publications/handbook.pdf , ratified by Greece under Law No. 225/1994.

[27] https://unfccc.int/process-and-meetings/what-is-the-united-nations-framework-convention-on-climate-change

[28] Available at https://unfccc.int/sites/default/files/kpeng.pdf

[29] https://unfccc.int/kyoto_protocol , Greece ratified the Kyoto Protocol with Law 3017/2002

- Paris Agreement

The Paris Agreement[30] is a legally binding international treaty on climate change, adopted in 2015 by 196 Parties at the UN Climate Change Conference (COP21), and entered into force in 2016. Its overarching goal is to hold "*the increase in the global average temperature to well below 2°C above pre-industrial levels*" and pursue efforts "*to limit the temperature increase to 1.5°C above pre-industrial levels*"[31]. To achieve this, GHG emissions must peak before 2025 at the latest and decline 43% by 2030.

To reach the goals of the Paris Agreement, countries have been submitting their national climate action plans since 2020. In their nationally determined contributions (NDCs), countries communicate actions they will take to reduce their GHG emissions and to adapt to the impacts of climate change.

The Paris Agreement is a landmark in the multilateral climate change process because, for the first time, a binding agreement brought all nations together to combat climate change and adapt to its effects. Its goal and timeline are crucial factors and, state's decision-making should be aligned with them, particularly regarding green investments and national lawmaking. After all, as confirmed by the IEA in its World Energy Outlook 2016, the Paris Agreement '*is at its heart an agreement about energy*'[32], particularly green energy.

4.1.2 International Jurisprudence

On issues not addressed or resolved within the context of the International Substantive Framework as analysed above under section 4.1.1, judicial bodies such as the International Court of Justice and the International Tribunal for the Law of the Sea, play a key role in interpreting and enforcing International Law related to the climate crisis, particularly in terms of the marine environment. International Jurisprudence is considered highly important for matters involving maritime boundaries, environmental protection, and the sustainable use of marine resources - issues directly linked to the development of offshore wind energy.

- International Court of Justice (ICJ)

The International Court of Justice (ICJ) is the principal judicial organ of the United Nations. It was established in 1945 by the Charter of the UN and began work one year later[33]. The Court's

[30] Available at https://unfccc.int/sites/default/files/english_paris_agreement.pdf
[31] https://unfccc.int/process-and-meetings/the-paris-agreement
[32] IEA (2016), World Energy Outlook 2016, IEA, Paris, https://doi.org/10.1787/weo-2016-en.
[33] https://www.icj-cij.org/court

role is to settle, in accordance with International Law, legal disputes submitted to it by States and to give advisory opinions on legal questions referred to it by authorized UN organs and specialised agencies.

Regarding the promotion of RES, particularly offshore wind, which requires further development, the ICJ is expected to contribute through its case law and advisory opinions.

- International Tribunal for the Law of the Sea (ITLOS)

The International Tribunal for the Law of the Sea is an independent judicial body established by the 1982 United Nations Convention on the Law of the Sea. Although the Tribunal was established by a UN Convention, it is not an "organ" of the UN. Even so, they maintain close links and in 1997 the Tribunal concluded an Agreement on Cooperation and Relationship between the UN and the International Tribunal for the Law of the Sea[34], which establishes a mechanism for cooperation between the two institutions.

The Tribunal has jurisdiction to deal with disputes (*contentious jurisdiction*) and legal questions (*advisory jurisdiction)* submitted to it[35].

On the one hand, the contentious jurisdiction of the Tribunal comprises any dispute concerning the interpretation or application of the Convention (subject to the provisions of article 297 and to the declarations made in accordance with article 298 of the Convention), and all disputes and applications submitted to it pursuant to the provisions of any other agreement conferring jurisdiction on the Tribunal (Statute, Article 21). A number of bilateral and multilateral agreements conferring jurisdiction on the Tribunal have been concluded to date, such as the Agreement for the Establishment of the Commission of Small Island States on Climate Change and International Law[36]. On the other hand, the Seabed Disputes Chamber is competent to give an advisory opinion on legal questions arising within the scope of the activities of the Assembly or Council of the International Seabed Authority (Article 191 of the Convention). The Tribunal may also give an advisory opinion on a legal question if this is provided for by "*an international agreement related to the purposes of the Convention*" (Rules of the Tribunal, Article 138). Hence, issues relating to the Convention may concern the delimitation of maritime zones, navigation, conservation and management of the living resources of the sea, protection and preservation of the marine environment and marine scientific research.

At this point, and to illustrate ITLOS role, it is enriching to refer to a recent opinion of the Tribunal. On 21 May 2024, upon the request dated 12 December 2022 from the Commission of

[34] Available at https://www.itlos.org/fileadmin/itlos/documents/basic_texts/agr_coop_un_en.pdf
[35] https://www.itlos.org/en/main/jurisdiction/
[36] Signed and entered into force on 31 October 2021, available at https://treaties.un.org/doc/Publication/UNTS/No%20Volume/56940/Part/I-56940-08000002805c2ace.pdf

Small Island States on Climate Change and International Law (composed of six States from the Caribbean and Pacific), ITLOS issued a unanimous advisory opinion[37] clarifying the legal obligations of State parties to LOSC to protect and preserve the world's oceans from climate change impacts, such as ocean warming, sea level rise, and ocean acidification resulting from climate change.

First of all, us underlined above, the Tribunal's jurisdiction to give an advisory opinion derives from Article 21 of its Statute and Article 138(1) of its Rules. In the opinion, it is stressed that *'relevant external rules'* addressing climate change exist in LOSC, although the specific term *'climate change'* does not. *'External rules'* such as the UNFCCC, the Kyoto Protocol, and the Paris Agreement, are important to clarify the meaning of the Convention's provisions. Obligations under LOSC and *'internationally agreed rules, standards, and procedures'* should be interpreted and applied to create a coherent and compatible set of obligations to tackle marine environmental harm. In view of this, ITLOS underlined States' International Law obligation (stipulated in Article 194) to take *'all necessary measures'* (best available science, international rules and standards such as those contained in climate change treaties, available means and capabilities) with a view to reducing and controlling existing marine pollution from GHG emissions and *'eventually preventing such pollution from occurring at all'*. Additionally, ITLOS noted that LOSC and the Paris Agreement remain two separate agreements, with distinct sets of obligations.

Hence, as far as Article 194 is concerned, mitigation efforts shall be borne by all States, but parties *'with greater means … must do more to reduce such emissions than States with less means*…'. In that regard, and in accordance with Articles 202 and 203, developed States have a specific duty to assist vulnerable developing States.

States must put in place a national system, including legislation, administrative procedures, and an enforcement mechanism to regulate GHG emitting activities and to *'make such a system function efficiently, with a view to achieving the intended objective'*. ITLOS stressed the necessity of conducting due diligence and adopting environmental impact assessment regulations for *'Any planned activity … which may cause substantial pollution to the marine environment … through anthropogenic GHG emissions*…'.

From an International Environmental Law as well as International Climate Change Law perspective, this is a landmark ruling and the first time that an international court or tribunal has addressed States' obligations to combat climate change within LOSC. ITLOS' unanimous advisory opinion has confirmed that climate change and its impacts are well within the environmental scope of LOSC. ITLOS has seized the opportunity to deliver a strong

[37] Available at https://www.itlos.org/fileadmin/itlos/documents/cases/31/Advisory_Opinion/C31_Adv_Op_21.05.2024_orig.pdf

pronouncement that national and international courts can now refer to, and build upon, when making their own assessments on climate-related cases. States are required to take *'all necessary measures'*, in line with the best available science, to prevent and control their GHG emissions, in accordance with LOSC and other relevant international legal obligations, and exercise *'stringent'* due diligence. Therefore, *'if a State fails to comply with this obligation (under Article 194), international responsibility would be engaged for that State'*, leading further to LOSC proceedings. This finding should serve as a wake-up call for all major CO2-emitting State parties to LOSC.

In conclusion this advisory opinion may encourage further efforts, in line with the general obligation in LOSC[38]. Looking ahead, one shall now wait to see the extent to which ITLOS, or other courts and tribunals exercising jurisdiction under LOSC, may be willing or prepared to assess and review whether climate related decisions and other policies made by State parties' national authorities align with the *'necessary measures'* requirement under Article 194 LOSC.

- United Nations Commission on International Trade Law (UNCITRAL)

The United Nations Commission on International Trade Law (UNCITRAL) is a core legal body of the UN system in the field of International Trade Law, with universal membership, with a focus on the modernisation and harmonisation of rules on international business. UNCITRAL plays a key role in developing and maintaining a robust cross-border legal framework for the facilitation of international trade and investment. It prepares and promotes the use and adoption of legislative and non-legislative instruments in a number of key areas of Commercial Law[39] and has also been involved in the development of international arbitration rules and Conventions that could be used to resolve disputes related also to offshore wind energy projects.

4.1.3 The COP28 UN Climate Change Conference

In 2023, the COP28 UN Climate Change Conference in Dubai marked the conclusion of the first '*global stock take'* of the world's efforts to address climate change under the Paris Agreement.

It was revealed that climate action was too slow – from reducing greenhouse gas emissions, to strengthening resilience to a changing climate, to getting the financial and technological support to vulnerable nations. In response, countries called on governments to accelerate the transition

[38]Yiallourides C. and Deva S., 'A Commentary on ITLOS' Advisory Opinion on Climate Change, British Institute of International and Comparative Law, 24 May 2024, available at https://www.biicl.org/blog/77/a-commentary-on-itlos-advisory-opinion-on-climate-change?cookiesset=1&ts=1719046736

[39] https://uncitral.un.org

away from fossil fuels to RES - such as offshore wind power - in their next round of climate commitments[40]. Although, a clear statement on phasing out of fossil fuels was not achieved in COP28, there was a clear recognition of the urgent need to accelerate action in this critical decade and achieve climate neutrality by 2050.

Hence, the science on why states should phase out fossil fuels is clear. But do they all have the money, technology and indeed a roadmap to get there? The world needs these energy sources to ensure a stable transition to renewables. COP28 President Sultan Al Jaber said before the climate talks that while a phasedown is "*inevitable*", it can only happen when the whole world has added a sufficient amount of renewable energy capacity. "*You can't unplug the world from the current energy system before you build the new energy system*," he said. "*It's a transition: transitions don't happen overnight, transition takes time*."

This transition should be supported more effectively by international organisations, ensuring that no one is left behind and bridging the existing gap between the developed and developing states.

4.1.4 International Maritime Organisation (IMO)

The International Maritime Organization (IMO) is the UN specialised agency with responsibility for the safety and security of shipping and the prevention of marine and atmospheric pollution by ships[41]. Its work supports the UN sustainable development goals.

The IMO has within its mandate to make trade and travel by sea as safe and secure as possible. To manage and mitigate any threats, the Organisation develops suitable regulations, guidance, and suggestions extended to offshore installations to ensure a safe and effective framework. For instance, the IMO, as the "*competent international organisation*" responsible for developing "*generally accepted standards*" for the safety of navigation under LOSC, adopted the "*Guidelines and Standards for the Removal of Offshore Installations and Structures on the Continental Shelf and in the Exclusive Economic Zone*". These guidelines and standards are relevant to the decommissioning of offshore wind parks and important for the offshore wind industry in general.

In this context, the IMO has recommended that "as far as practicable, structures are not established within routeing systems or near their terminations", governments "study the pattern of shipping through offshore resource exploration areas at an early stage so as to assess potential interference with marine traffic" and ensure that exploitation of natural resources in the EEZ "*does not seriously obstruct sea approaches and shipping routes*." Furthermore, these

[40] https://unfccc.int/cop28
[41] https://www.imo.org/en/OurWork/Pages/Default.aspx

guidelines must be considered when making decisions regarding the removal of abandoned or disused installations or structures[42].

It seems sensible to assume that, at a minimum, in deciding where to locate offshore wind facilities, coastal states must respect any IMO-approved schemes. No development should take place within areas that are of significance to navigation. IMO Resolution A.572 (1985)[43] states that "*a government proposing a new routeing system or an amendment to an adopted routeing system, any part of which lies beyond its territorial sea, should consult IMO*".

The IMO has provided specific guidelines for giving effect to Article 60 LOSC, including with respect to the publication obligations of coastal states, flag state obligations, and the measures to be followed in reporting violations of safety zone regulations.

4.2 European Union

The Article 4 of the Treaty on the Functioning of the European Union[44] (TFEU) includes the common energy policy among the areas of shared competence between the EU and the Member States.

Hence, renewable energy is at the heart of regulatory European framework with Directives and Regulations, particularly offshore wind which is of utmost priority for implementing the European Commission's strategy to harness the offshore renewable energy sources[45]. Wind power is Europe's richest energy resource and offshore wind potential is so substantial it could meet seven times the energy demand in Europe.

According to the European Commission, the offshore wind energy is central source to the implementation of the European Green Deal[46] as it represents exactly what it aims for - clean, European-produced energy, independent of third countries and accessible to all. The EU Commission see wind being half of Europe's electricity by 2050, with wind energy capacity rising from 220 GW today to up to 1,300 GW. That entails a fifteenfold increase in offshore wind in the EU. In view of this, the Commission published a dedicated EU strategy on offshore renewable energy (COM/2020/741)[47] in 2020 which proposes concrete ways forward to support the long-term sustainable development of this sector, and presented 2 wind power initiatives in

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[42] O'Hara' M.C., The legal and regulatory framework governing offshore decommissioning, Construction Law Journal, 122, 2015

[43] https://wwwcdn.imo.org/localresources/en/KnowledgeCentre/IndexofIMOResolutions/AssemblyDocuments/A.572(14).pdf

[44] https://eur-lex.europa.eu/EN/legal-content/summary/treaty-on-the-functioning-of-the-european-union.html

[45] https://ec.europa.eu/energu/topics/renewable-energy/eu-stratgy-offshore-renwable-energy_

[46] Available at https://www.esdn.eu/fileadmin/ESDN_Reports/ESDN_Report_2_2020.pdf

[47] https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM%3A2020%3A741%3AFIN

2023 which aim to accelerate wind energy manufacturing and deployment in Europe (the European Wind Power Action Plan COM/2023/669[48] and Communication on achieving the EU's offshore wind ambitions COM/2023/668[49]).

Moreover, on 27 June of 2024, a guidance document (C/2024/3998)[50] outlining ways in which investment frameworks for cross-border offshore grid and renewable projects can be organized most efficiently has been published by the European Commission. The document recommends that EU countries and National Regulatory Authorities, supported by TSOs, discuss principles for collaboration – including on costs – already at the stage of identifying the network needs to accelerate the emergence of new cross-border projects. They also call on ENTSO-E to further develop effective modelling tools to better account for EU countries' needs for information[51]. This document highlights the crucial role that the Commission shall play in providing guidance on collaborative investment frameworks for offshore energy projects.

Europe needs to accelerate the build-out of wind to deliver REPowerEU, and, therefore, needs offshore renewables and doubling investments in electricity grids. This will lower dependence on foreign gas, increase security of supply, support economic competitiveness and be a pillar of the energy transition. Making this happen requires developing collaborative investment frameworks between states, ensuring an equitable distribution of costs.

It must be also noted that the Energy Ministers of 26 EU Member States, including Greece, signed the European Wind Charter[52] on 19 December 2023. Thus, 26 European governments committed to take the urgent measures outlined in the Wind Power Package published by the European Commission to boost the competitiveness of Europe's wind value chain. Most of these actions are the responsibility of national governments. In addition to national governments, 300 companies and organisations from Europe's wind energy sector have signed the European Wind Energy Charter.

From the above, it becomes evident that wind will be the backbone of Europe's energy system. Generally, the significance of RES, especially of wind, has been also emphasized by the case law of the European Court of Justice (ECJ). It has been ruled that for fragile ecosystems, such as small islands, only mild energy systems are permissible. These systems must always be local, of low or medium voltage, or consist of methods for producing electricity from RES, such as wind energy[53].

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[48] https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52023DC0669
[49] https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX%3A52023DC0668
[50] https://energy.ec.europa.eu/publications/guidance-collaborative-investment-frameworks-offshore-energy-projects_en
[51] https://energy.ec.europa.eu/news/commission-provides-guidance-collaborative-investment-frameworks-offshore-energy-projects-2024-06-27_en
[52] https://energy.ec.europa.eu/system/files/2023-12/Charter_logos_final_02.pdf
[53] Vatalis K., Introduction to the Law of Electricity Generation from Renewable Energy Sources, Foreword by A.I. Tachos, Sakkoulas Publications, 2007, p. 18

Concluding the analysis of the EU's role and contribution, it would be remiss not to note the following. The WindFloat Atlantic project, developed by the Windplus consortium based on the WindFloat 1 Project model, is located off the Portuguese coast near Porto and represents the first wind farm financed by a consortium of financial institutions. The government of Portugal, the European Commission, and the European Investment Bank provided financial support totaling €60,000,000 for the construction of this project. This contribution of the European Commission underscores its pivotal role in providing tangible and substantial support for the development of offshore wind projects within the Union.

4.3 World Bank

The World Bank is the biggest multilateral funder of climate investments in developing countries[54] and, thus, shall also support sustainable energy projects and particularly offshore energy initiatives by providing funding and expertise in different regions around the world.

4.4 International Energy Agency (IEA)

International Energy Agency (IEA) is an intergovernmental organisation, that provides policy recommendations, analysis and data on the global energy sector. The IEA was set up under the framework of the Organisation for Economic Cooperation and Development (OECD) in 1974 and works with governments and industry to shape a secure and sustainable energy future for all[55].

The core activity of the IEA is providing policy advice to its member states and associated countries to support their energy security and advance their transition to clean energy. Recently, it has focused on supporting global efforts to accelerate clean energy transition, mitigate climate change, reach net zero emissions, and prevent global temperatures from rising above 1.5 °C. All IEA member countries have signed the Paris Agreement, and two thirds of IEA member governments have made commitments to emission neutrality by 2050.

Considering the role of the Agency, it is evident that it shall raise awareness by promoting policy guidance and best practices for offshore wind energy development and contribute to the further development of offshore wind industry.

[54] https://www.worldbank.org/en/home
[55] https://www.iea.org/about

4.5 International Renewable Energy Agency (IRENA)

International Renewable Energy Agency (IRENA) is a global intergovernmental agency for energy transformation. IRENA serves as the principal platform for international cooperation and supports countries in their energy transitions by providing data and analyses on technology, innovation, policy, finance and investment[56]. IRENA drives the widespread adoption and sustainable use of all forms of renewable energy, including ocean, and wind energy in the pursuit of sustainability, energy access and security, for economic and social resilience and prosperity.

4.6 Dispute Settlement Mechanisms

Given that this chapter explores the role of International Institutions, it would be a significant omission not to reference dispute settlement mechanisms and their potential contribution to promoting offshore wind.

Courts and international arbitration institutions shall provide efficient and reliable dispute settlement mechanisms for the arising disputes. For example, the International Chamber of Commerce (ICC), the London Court of International Arbitration (LCIA), and others, can provide specialised arbitration services for offshore wind energy disputes in order to ensure timely and binding resolutions in terms of investment issues. They might also offer expertise in drafting contracts and valuable insights for clear clauses.

Furthermore, the Permanent Court of Arbitration has developed into a modern, multi-faceted arbitral institution, perfectly situated to meet the evolving dispute resolution needs of the international community.

International Centre for Settlement of Investment Disputes (ICSID), a part of the World Bank Group, specialises in resolving investment disputes, which can be relevant for offshore wind energy projects that involve foreign investments.

On the other hand, ad hoc arbitration tribunals are also essential in this process as many investors choose ad hoc arbitration for its potential cost-efficiency, as well as for ensuring arbitrator independence and impartiality.

As already discussed, the International Court of Justice shall contribute to dispute settlement and advisory opinions, in accordance with International Law, thereby establishing a clear and efficient legal environment.

[56] https://www.irena.org/About

Similarly, the International Tribunal for the Law of the Sea shall play a crucial role in resolving disputes and offering advisory opinions, ensuring the adherence to the United Nations Convention on the Law of the Sea.

Respectively, the arbitral tribunal constituted in accordance with Annex VII to the LOSC, and the special arbitral tribunal constituted in accordance with Annex VIII shall ensure the effective resolution of the relevant disputes through specialized dispute resolution mechanisms.

Taking into great consideration all the above-mentioned, one would expect that the legal responses provided by various international courts and tribunals will be consistent and complementary. This would establish a comprehensive framework for dispute settlement across all aspects of the International and Investment Law in terms of offshore wind industry.

5. The Law of the Sea

Harnessing the wind potential of the seas requires offshore installations to produce, transfer and distribute energy through underwater cables. Marine energy installations are primarily regulated by the Law of the Sea. Therefore, it is enlightening to focus on the provisions related to exploiting offshore wind energy in the oceans. Specifically, the general framework of jurisdictional allocation in marine areas will be analysed, while the importance of delineating maritime zones for the exploitation of energy resources will be highlighted. Subsequently, the obligations of states will be briefly discussed, and the dispute resolution system to which interested parties can resort for emerging disputes at sea will be outlined.

5.1 Overview

The United Nations Convention on the Law of the Sea, referred to as the Constitution of the Sea (by the President of the 3rd UN Conference on the Law of the Sea), does not provide for a proper regime for offshore wind energy. This is not surprising because in 1982 (when the Convention was elaborated) offshore wind was not yet a widely spoken subject. The offshore wind industry is relatively recent arrival to the use of the oceans comparing to traditional activities, such as fishing, shipping, and offshore hydrocarbon development.

As previous discussed, this international agreement establishes a legal framework for maritime activities and sets the limit of various areas measured from a carefully defined baseline. Under LOSC, coastal states can establish "zones of jurisdiction" within which they exercise specific rights and obligations. The LOSC recognizes internal waters, territorial sea, archipelagic waters, contiguous zone, exclusive economic zone (EEZ), continental shelf, high seas, each with specific rights and responsibilities for coastal and landlocked states. The Ecological Protection Zone, the Fisheries Protection Zone, the Ecological and Fisheries Protection Zone are newer jurisdictional zones that have emerged (for instance in Adriatic and Western Mediterranean) and within them coastal states exercise some of the rights that International Law recognizes in the EEZ.

In general, the most significant issues covered under LOSC are navigation, transit and exploitation regimes, protection of the marine environment, scientific research, and settlement of disputes. The LOSC strongly promotes the peaceful use of marine resources, environmental protection, and the equitable distribution of ocean wealth. Regarding offshore wind energy, the LOSC is of particular importance; therefore, an in-depth analysis of the relevant provisions will be undertaken hereunder.

5.2 Maritime Zones & Aeolian Ambitions

States have the legal authority to construct offshore wind farms in the coastal oceans consistent with the legal framework of the LOSC, and two maritime zones have relevance to this right: a) the 12-nm territorial sea and b) the 200-nm EEZ.

5.2.1 Territorial Sea

Pursuant to Article 3 LOSC, coastal states have sovereign jurisdiction over the territorial sea and thus have the same sovereign rights, legal and regulatory powers in this zone as they do on land. In other words, the coastal state exercises full sovereignty over the territorial sea, which extends to the air, bed and subsoil, but is clearly limited by the right of innocent passage for ships of all States (Articles 17-19 LOSC).

Innocent passage encompasses transit only and the coastal State may set up sea-lanes in which ships in innocent passage must remain. Activities such as fishing, research, weapons use, loading or unloading of commodities or any threat to the stability of the coastal State are a breach of the right of innocent passage. If such activities take place, the coastal State is entitled to move to prevent further passage or presence within the territorial sea. The Article 22 is relevant, as the coastal state may have designated sea lanes and traffic separation schemes in the territorial sea (therefore, energy installations cannot be placed there).

In the case of energy production using alternative sources near the shore, within the territorial sea, the coastal state exercises full and clear sovereignty over the energy production installations.

It must be also stressed that "*Every State has the right to establish the breadth of its territorial sea up to a limit not exceeding 12 nautical miles, measured from baselines*" determined in accordance with the LOSC (Article 3). The normal baseline is the low water - line along the coast as marked on large – scale charts officially recognised by the coastal state from which the breadth of the territorial sea, as well as other maritime jurisdiction zones, is measured. Depending on the morphology of the coastline, it is possible to follow different methods of drawing baselines according to Articles 5-10 of the Convention.

From that point, sovereignty is limited, and we refer only to sovereign rights, i.e., functional rights. Such rights convey legal authority over some activities, such as the production of energy from water currents and winds (Article 56(1)), but do not convey exclusive legal authority over other activities. Essentially, beyond the 12 nm of the territorial sea, floating wind turbines can only be installed within the framework of the EEZ or a designated energy zone. Consequently, it is necessary to reference and analyse these concepts accordingly.

5.2.2 Exclusive Economic Zone (EEZ)

The Exclusive Economic Zone is perhaps the greatest immediate advance in International Law stemming from the LOSC. This institution[57] is highly important for energy production from the sea, particularly for the development of offshore wind energy. The ICJ has described it as "*part of modern International Law*".

To begin with, it must be noted that the EEZ is established as a claimable maritime zone. In view of this, LOSC sets the EEZ apart from the continental shelf, which vests inherently in coastal states. Hence, unlike the continental shelf, this zone does not exist ipso facto and ab initio; it must be declared and delimitated pursuant to Article 74(1). Although, both legal statuses reflect customary law (Tunisia/Libya 1982[58], Libya/Malta 1985[59]), their relation is particularly complicated, since it entails the simultaneous application of two different regimes in the same strip of coast (except when the continental shelf outer limit is beyond 200 nm).

To continue, the EEZ combines characteristics of both the territorial sea and the high seas but cannot be assimilated to either, as it is a sui generis and sui juris zone[60] with its own '*specific legal regime*' (Article 55), an intermediate ocean space between the mare liberum and the mare clausum. Unlike the territorial sea it is not an area in which coastal states have a plenary and ipso jure entitlement to sovereignty, and, in contrast to the high seas, it is not a zone in which other states have unfettered freedoms. It is an amalgam or multifactional zone, in which coastal states enjoy specific functional sovereign rights in relation to economic resources and jurisdiction, not only in relation to these rights, but also for certain other matters, including environmental protection[61].

It must be stressed the particular reference to the "*production of energy from the water, currents and winds*". More precisely, Article 56(1)(a) clearly determines that in the EEZ, the coastal state has:

'sovereign rights for the purpose of exploring and exploiting, conserving and managing the natural resources, whether living or non-living, of the waters superjacent to the seabed and of the seabed and its subsoil, and with regard to other activities for the economic exploitation

[57] Strati A., Greek maritime zones and delimitation with neighbouring states, Nomiki Bibliothiki, 2012, p. 9
[58] https://www.icj-cij.org/case/63
[59] https://www.icj-cij.org/case/68
[60] Shearer I., 'Oceans Managements Challenges for the Law of the Sea in the First Decade of the 21st Century" in Alex G Oude Elferink and Donald R Rothwell (eds), Oceans Managements in the 21st Century: Institutional Frameworks and Responses (Leiden, Martinus Nijhoff, 2004) 10.
[61] Kwiatkowska B., The 200 Mile Exclusive Economic Zone in the New Law of the Sea (Dordrechr, Martinus Nijhoff, 1989), p. 4

and exploration of the zone, such as the production of energy from the water, currents and winds'.

As per Article 56(1)(b), the coastal state has also jurisdiction with regard to marine scientific research and the establishment and use of artificial islands, installation and structures. Moreover, Article 60 stipulates that in the EEZ the coastal State has the exclusive right to construct, authorize and regulate the construction, operation and use, i.e., the management, of artificial islands, installations and structures at sea, in order to exercise its sovereign rights over the natural resources found in the EEZ (Article 56(1)(a) LOSC). The general competence of the coastal state over artificial installations in its maritime zones and over the people in them was discussed by the ITLOS in the Arctic Sunrise Case (Kingdom of the Netherlands v. Russian Federation[62]).

The abovementioned also refers to energy installations at sea, such as offshore installations for the production of energy from alternative sources, in particular wind energy, wave energy, tidal energy, chemical energy from temperature fluctuations (ocean thermal energy conversion) and salinity gradient energy[63]. The coastal state shall have exclusive jurisdiction over such structures, including jurisdiction with regard to fiscal and regulations. The regulatory framework should provide from the delegation of responsibility for siting to the actual siting and day-to-day business activity and liability for any environmental or other damage caused. Some rules can be traced back to the history of international law (e.g. the rules on cables traced back to the Paris Convention for the Protection of Submarine Telegraph Cables, USTS 380, signed on 14.03.1884), others are completely new or extremely specific, while others remain to be adjusted. All regulatory frameworks are influenced by the nature of energy and the technology that makes new energy sources accessible, manageable, useful.

In view of this, coastal states within their declared EEZs can regulate offshore wind farms and the subsea cables that connect them to land. Due notice must be given of the construction, and permanent means for giving warning of their presence must be maintained, while there are specific provisions for the abandoned structures and their removal. If necessary, reasonable safety zones shall be established taking measures to ensure the safety of navigation and structures. All ships must respect these safety zones and comply with generally accepted international standards.

According to Article 56(2), in exercising its rights and performing its duties, the coastal state shall have due regard for its other obligations in the same zones, e.g., the protection and preservation of the marine environment (Article 56(1)(b)(iii)), as well as the rights and

[62] https://www.itlos.org/en/main/cases/list-of-cases/case-no-22/

[63] International Renewable Energy Agency (IRENA), Ocean Energy Technology Brief 1,2,3,4, June 2014, irena.org

obligations of other states (which implies the existence of concurrent thematic competences in the same area) and shall act in a manner generally compatible with LOSC.

On the other hand, all states enjoy the freedoms referred to in Article 87 of navigation and overflight and of the laying of submarine cables and pipelines, and other internationally lawful uses of the sea related to these freedoms, and compatible with the other provisions of LOSC. States shall have due regard to the rights and duties of the costal state and shall comply with the laws and regulations adopted by it in accordance with LOSC and International Law (Article 58).

It becomes evident that each state has a specific obligation to comply directly related to the activity it undertakes, thus there is no shared responsibility among the involved states. Should a conflict arise between the interests of the coastal state and any other state (flag state), the conflict should be resolved under Article 59 on the basis of equity and in the light of all the relevant circumstances, taking into consideration the interests involved to the parties and to the international community.

Article 57 stipulates that the EEZ stretches from the baselines out to 200 nm from the coast. A good example is the North Sea, which, after certain disputes has been divided in accordance with International Law between the five coastal countries (Norway, Denmark, Germany, the Netherlands, and the UK). However, this Article raises a highly sensitive and controversial issue in the escalating race for resources, particularly offshore wind energy. Although no states have made EEZ claims exceeding 200 nm, several have measured the breadth of their EEZ from baselines that do not conform with the LOSC. Under LOSC, states are free to claim an EEZ of lesser breadth than 200 nm if they wish and also to assert less than the full complement of rights afforded by the EEZ regime. For instance, the UK did not proclaim an EEZ until 2014, preferring to keep in place a 200 nm Exclusive Fishing Zone.

In recent years, new jurisdictional zones have appeared, which are not foreseen by the Convention, such as the Fisheries Protection Zone (Spain, Libya), the Ecological Protection Zone (Italy, Slovenia), or a combination (Croatia). These zones are de facto EEZs. The United Kingdom established 'Renewable Energy Zone', the extent of which is equivalent to that of the EEZ (Renewable Energy Zone - Designation of Area, Order 2004, S.I. 2004/2668). It is generally accepted that these zones involving reduced application of the LOSC's EEZ regime are lawful, however a number of states have converted such lesser zones into EEZs and only a small number of such claims continue to exist. Whichever way such zones are characterized or named, their compatibility with the LOSC will turn on the extent to which any rights asserted are consistent with those rights conferred under the EEZ regime.

It may also be noted that the 200 nm maximum will not be able to be reached in places where the distance between opposite coastal states is less than 400 nm. In such circumstances and for adjacent states which both maintain EEZ claims, a maritime boundary will need to be delimited

in accordance with the procedure and principles set out in Article 74. The potential for overlapping EEZs in enclosed or semi-enclosed seas, such as the Mediterranean, has given rise to disputes as to how best to manage the waters of these ocean spaces pending maritime boundary delimitation. In places where EEZ areas overlap, such disputes have often been resolved or deferred by coastal states partially implementing the EEZ regime or through agreements for the joint management of resources. The only exceptions to the capacity of coastal states to claim an EEZ from their territory relates to artificial islands, installations and structures according to Article 60 (8) and '*rocks which cannot sustain human habitation or economic life of their own'* according to article 121(3).

Article 59 directs that, if a conflict arises between the interests of a coastal state and another state in relation to unregulated matters in the EEZ, then the dispute should be resolved '*on the basis of equity and in light of all relevant circumstances'* including the *'importance of the interests involved to the parties'* and to *'the international community as a whole*'. This is an open-ended formulation and can only be given meaning by practice through agreement between states or through guidance by arbitration or judicial determination pursuant to Part XV in the event that any disagreement is not settled by the parties.

It is evident that the abovementioned framework of the EEZ directly pertains to the development of offshore wind energy, where winds are stronger and there is ample space for wind farms. Therefore, offshore wind installations can be exclusively regulated by the coastal state beyond the coastal zone only if it declares an EEZ or an 'energy zone' which is a functional version of the EEZ.

The legal status of offshore wind facilities beyond EEZs in the high seas is not addressed by LOSC, and the introduction of floating platforms in deeper waters could lead to maritime disputes. Marine corridors in EEZs within and around the farms likely will be required and influenced by grid layouts to accommodate fishing and smaller vessels. The security of future wind farms may increase as they become more integrated with coastal state national grids. One is sure, we are witnessing the dawn of a new era in the complex and extensive use of marine resources.

5.2.3 Continental Shelf

Part VI of the LOSC is dedicated to a maritime zone that has generally generated considerable debate. According to Article 76:

"*The continental shelf of a coastal state comprises the seabed and subsoil of the submarine areas that extend beyond its territorial sea throughout the natural prolongation of its land*

territory to the outer edge of the continental margin, or to a distance of 200 nm from the baselines from which the breadth of the territorial sea is measured where the outer edge of the continental margin does not extend up to that distance."

This zone may extend beyond the limit of 200 nm, but not beyond the 350 nm from the baselines or 100 nm from the 2,500-meter isobaths. Over this zone, the costal state exercises exclusive sovereign rights for the purpose of exploring it and exploiting its natural resources. In this zone, we refer only to mineral and other non-living resources of the seabed and subsoil, along with living organisms belonging to sedentary species (Article 77). Additionally, the exercise of the rights by the costal state must not infringe or unjustifiably interfere with navigation and other rights and freedoms of other states (Article 78).

Pursuant to Article 79, all states are entitled to lay submarine cables and pipelines on the continental shelf. However, the coastal State retains exclusive jurisdiction over pipelines constructed or used for the exploration of its continental shelf and the final say (consent) in deciding the delineation of the course of their laying (Article 79(3)). This is crucial for the interconnection of the states in terms of electricity produced by RES, such as offshore wind.

The North Sea Continental Shelf (Federal Republic of Germany/Netherlands) case[64] was decisive for the legal status of the continental shelf, in which the customary ipso facto and ab initio nature of the coastal state's rights over its continental shelf was recognised. Due to space constraints, this maritime zone will not be discussed further, as its context does not concern the exploitation of alternative forms of energy production (air and waves do not fall within the definition of mineral resources under Article 77).

However, from this analysis becomes evident that the production of green energy beyond the territorial sea becomes possible only if an EEZ has been declared. It is relevant to our subject that within continental shelf third states retain the right to lay submarine cables and pipelines, while the coastal state has a say only in determining their route.

5.2.4 High Seas

Part VII of LOSC refers to high seas, which is described as "res communis". All countries can use and harness high seas as long as they respect conditions laid down by rules of International Law.

[64] https://www.icj-cij.org/case/52

Pursuant to Article 87, high seas are open to all states and freedom of the high seas comprises, inter alia, freedom of navigation, overflight, freedom to lay submarine cables and pipelines, freedom to construct installations, and other activities in areas beyond national jurisdiction.
Although the regime of mare liberum seems to have prevailed over mare clausum, in recent decades there has been a shift towards a functional mare clausum approach to the high seas, aimed at protecting and conserving the marine environment and ocean biodiversity through the creation of marine protected areas. According to the principle of freedom of the high seas, exploitation of wind by States is free. Hence, the question is whether offshore wind installations could be placed and operated in high seas. To answer this question, one should take into consideration the following issues:

i. Any rights in relation to the high seas would have to be granted by a state party. "Derivative" rights can only be granted to the extent the respective member state itself has such rights in the relevant area. While in the EEZ only one member state is privileged and can grant a private entity its exclusivity to exploit a certain area, this is not true for the high seas, where exists the "freedom of the seas".

ii. The LOSC contains regulations with regard to activities by the coastal State for the economic exploitation and exploration of the EEZ and specifically mentions the production of energy from wind (Art. 56(1)(a)), but such specific provision does not exist for the High Seas. To develop offshore wind farms on the High Seas under the current regime, its development should be an execution of the general freedoms of the seas granted in the general clause of Article 87. The Convention explicitly allows construction of artificial islands and other installations (Article 87(1)(d)). In this light, it must be accepted that offshore wind farms might be categorized as "installations and structures" and under that aspect they could generally be allowed on the High Seas, given that the list of Article 87(1) is non-exhaustive ('inter alia') and any lawful use of the seas is generally permitted even if it is not specifically mentioned.

iii. As per Article 88, the high seas shall be reserved for peaceful purposes, whereas Article 87(2) stipulates that all freedoms can only be exercised with due regard for the interests of other states in their exercise of the freedom of the high seas and the rights under the LOSC with respect to activities in the Area. Thus, states are bound to refrain from acts that might adversely affect the use of the high seas by other states.

   It is unclear how a balance of interests can be created in a conflict, as the construction of an offshore wind farm currently requires significant space, and operators would require that others do not use that space. Shipping, fishing and the exploitation of other resources within areas of offshore wind farms would not be feasible and that means that the impact of large-scale offshore wind farms is significantly larger than that of an individual installation or artificial island (meaning that it restricts the use of much

vaster areas and requires exclusive use of space). If this is the case, the limitation to the freedom of the seas will apply regardless of whether offshore wind farms were potentially flagged as ships or constructed as permitted offshore installations. Consequently, no state can claim the freedom to build offshore wind farms on larger areas by reference to its freedom on the high seas (unless agreed so by all member states).

iv. Another hindrance following the lack of exclusivity in the high seas is the question of jurisdiction and applicable law. This is relevant in order to determine standards (e.g. regarding environmental and labour protection), but also for protection of ownership and taxation. States and private entities would find it difficult to protect their ownership both by concept and by jurisdiction in the high seas. To make offshore wind farms feasible on the high seas, the implementation of additional regulation is required. Such regulation would need to address the right of use as well as ownership and jurisdiction issues[65].

Taking all the aforementioned points into great consideration, it can be concluded that the authority of the coastal state over energy installations dissipates when they are in the high seas and is replaced by the full jurisdiction of the flag state. The freedom of the high seas (which includes the freedom to construct energy installations) requires a balance of multiple rights and obligations (Article 87(1)(d). In practice, temporal priority is determined by access to the necessary technology and working capital. The LOSC does not include procedures for resolving priority conflicts in the same use of the sea, creating conditions of diffuse authority. Access to energy resources involves at least elements of sharing, even when we are called upon to decide on the management of renewable energy sources, the common nature of which almost precludes acts of sovereignty over them. The crucial question is whether and to what extent the shared nature of these resources leads states to an obligation to cooperate in their exploitation. Exclusive jurisdiction often implies dominance in maritime space, as the multiplicity of the utilitarian approach reaches its limits when de facto a particular point in a particular area must belong to coastal state A or coastal state B. The solution - politically difficult to manage - is delimitation, which can be done either in a contractual manner or by referral to dispute settlement procedures (arbitration or court). What both forms of delimitation have in common is the consensus[66] that is required even in cases where forms of cooperation are preferred.

In any case, under current regime, permanent installations and structures in the high seas are prohibited, because this right would imply a claim for exclusivity. No country has exclusive

[65] Fischer F., Chatham Partners LLP, Offshore Wind in High Seas, 2019, available at https://chatham.partners/site/assets/files/1452/chatham-partners-offshore-wind-farms-in-high-seas.pdf

[66] Gavouneli M., Energy installations at sea, Nomiki Bibliothiki, Athens, 2016, p. 17

rights to the high seas and cannot claim territory or restrict the freedoms of other states in these areas. Such rights are only applicable within a nation's territorial sea.

5.3 Delimitation Issues

The delimitation of maritime zones of coastal states is of critical importance for the unhindered exploitation of energy resources at sea. The process requires the consent of the interested states to regulate the issues of selecting the method, establishing joint exploitation zones, and the obligations of the parties.

A clear distinction must be made between the declaration and the delimitation. The declaration of a maritime zone is a unilateral act of the coastal state and shall comply with International Law, otherwise, it is void and unenforceable. In the case of states with opposite or adjacent coasts where the maximum breadth of the territorial sea or the EEZ cannot be exhausted, there arises a need for delimitation.

The delimitation process is broadly outlined in LOSC but does not establish specific rules clearly. Thus, the perception has been established that the Law of delimitations is primarily Customary, as shaped by international practice and jurisprudence (acquis judiciaire / judge-made law). While the process of delimiting the territorial sea presents the greatest clarity as it involves the application of the Customary rule of the median line based on the principle of equidistance, on the other hand, the delimitation of the continental shelf and the EEZ is a more complex process.

Articles 74 and 83 of LOSC stipulate that delimitation shall be effected by agreement in accordance with International Law, as referred to in Article 38 of the Statute of the International Court of Justice, so as to achieve an equitable solution. It follows that the first fundamental element is the agreement of the parties, which, according to international jurisprudence, must always be achieved through good faith negotiations (North Sea Continental Shelf - Federal Republic of Germany/Netherlands[67]). While the delimitation is pending, the provisions of LOSC encourage the States to make every effort to reach provisional arrangements of a practical nature in a spirit of understanding and cooperation and with the obligation not to prevent the achievement of a definitive agreement during this transitional period. Although the LOSC does not oblige states to engage in joint exploitation in areas of overlapping claims, co-exploitation agreements are increasingly being concluded and joint cooperation zones are being adopted either as a final compromise or as a way of temporary settlement.

[67] https://www.icj-cij.org/case/52

The concepts of declaration and delimitation are sine qua non for the development of offshore wind energy for the following reasons:

a) If the coastal state is interested in traditional forms of energy production at sea, the ipso facto and ab initio existence of the continental shelf provides a sufficient legal basis, whereas if it aspires to expand into new forms of energy production, the declaration of an EEZ becomes a one-way street to better protect its interests and those of any investors.

b) Furthermore, the full development of the EEZ requires vast maritime areas. Where the latitude expected by the Convention is insufficient, there is an urgent need to delimit maritime zones. This process directly touches the hard core[68] of state sovereignty and foreign policy of exploiting energy resources.

Pursuant to Article 74, the delimitation of the EEZ shall be carried out:

- either, after successful negotiations, by mutual consent and agreement on the basis of International Law, as referred to in Article 38 of the Statute of the ICJ, in order to achieve an equitable solution, or,

- if no agreement can be reached, the states shall resort to the procedures provided for in Part XV regarding the settlement of disputes (the mechanism is set out below).

In general, the delimitation of maritime zones can result from either bilateral or multilateral agreements[69] or institutional initiatives[70]. References to the prospects of exploiting energy resources at sea are frequent during the negotiations and are reflected in the provisions of the

[68] Article 27 of the Greek Constitution requires a law to be passed by an increased majority for any change in the boundaries of the Territory. If this concept covers only the areas over which Greece exercises sovereignty, then a law with a majority vote is required for the extension of the coastal zone, but not for the declaration of an EEZ, maritime zone over which the coastal state exercises sovereign rights and not full sovereignty (Law 786/1978, Law 4001/2011). According to E. Roukounas, "*...disputes relating to the territorial status of Greece*" must be interpreted in accordance with the rules of International Law as they exist today, and not as they existed in 1931 (Aegean Continental Shelf - Greece v. Turkey, Judgment of 19 December 1978, ICJ Reports 1978, par. 80, available at https://www.icj-cij.org/case/62).

[69] Agreement between the Government of the Republic of Estonia, the Government of the Republic of Latvia and the Government of the Kingdom of Sweden on the Common Maritime Boundary Point in the Baltic Sea in 1997 which was supplemented in 2001 by the Agreement between the Government of the Republic of Finland, the Government of the Republic of Estonia and the Government of the Kingdom of Sweden on the Common Maritime Boundary Point in the Baltic Sea.

[70] Institutional actions Pacific Islands Forum (2012 - South Pacific Ocean, https://www.abc.net.au/news/2012-08-31/an-forum-communique/4237098)

relevant contracts. In any case, the outer limit lines of the EEZ and the lines of delimitation drawn in accordance with Article 74 shall be shown on charts. The coastal state shall give due publicity to these charts and deposit a copy with the Secretary – General of the UN (Article 75).

As discussed, there are two delimitation approaches:

5.3.1 Delimitation agreement with the consent of the parties

LOSC stipulates that delimitation requires consent and shall be effected by agreement on the basis of International Law (Article 38 of the Statute of the ICJ), in order to achieve an equitable solution.

The delimitation conventions of the Republic of Cyprus are the first to refer directly to the EEZ in the Mediterranean. The Agreement between the Republic of Cyprus and the Arab Republic of Egypt on the EEZ[71] adopts the median line principle with minor modifications, includes general principles of cooperation and effectively applies Article 287 LOSC to resolve any resulting dispute by arbitration. In contrast, the Agreement with the Government of the Republic of Lebanon[72] was never ratified by Lebanon, which unilaterally made a different delimitation. The third delimitation agreement was made with the Government of the State of Israel[73], which creates a grey area of 850 square kilometres.

At this point it is necessary to make two observations: First, that the Cyprus Delimitation Agreement with Egypt was followed by the Continental Shelf Delimitation Agreement between Turkey and TRNC[74], and second, that the 2003 Venice Declaration on the Sustainable Development of Mediterranean Fisheries Resources[75] in the context of the EU's initiative to adopt EEZs in the Mediterranean - at least in the form of fishing zones - demonstrates the current trend towards the adoption of delimitation agreements covering all maritime zones (with a particular focus also on energy issues).

The Eastern Mediterranean is one of the most typical examples of maritime areas with delimitation issues. Its narrow boundaries do not allow for the full development of maritime zones and give rise to a chain of delimitations of enormous importance for the exploitation of energy resources. Most of the existing delimitation conventions in the Mediterranean cover the

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[71] https://www.un-ilibrary.org/content/books/9789210572552s002-c001
[72] https://www.undp.org/sites/g/files/zskgke326/files/migration/lb/Legal-section-1-6.pdf
[73] https://treaties.un.org/pages/showDetails.aspx?objid=08000002802d12b7
[74] Ioannidis N., The Continental Shelf Delimitation Agreement Between Turkey and "TRNC", Blog of the European Journal of International Law, 2014, https://www.ejiltalk.org/the-continental-shelf-delimitation-agreement-between-turkey-and-trnc/
[75] https://www.uicnmed.org/web2007/CDGovernance/conten/2-tallerexpertos/conten/d/declarationvenice_en.pdf

western part of the basin and the Adriatic, refer to the delimitation of the continental shelf and date back to the status of the 1958 Geneva Conventions. Hence, it is essential to establish maritime zones in the Mediterranean region to facilitate energy development and to ensure cooperation and access to amicable dispute resolution methods.

5.3.2 Judicial delimitation

If no agreement can be reached, the states involved shall resort to the procedures provided for in Part XV regarding the settlement of disputes (after referral of the disputes to an international or arbitral institution, mainly the ICJ or part of it, ad hoc Arbitral Tribunal, possibly also the ITLOS).

It must be stressed that the prerequisite of consent exists in this case as well, but the decisive intervention of the third party (judge or arbitrator) adds another level of difficulty especially when there is already an energy presence in the disputed area. This is attempted to be demonstrated by presenting a series of examples as follows below. It is noted that examples are also drawn from the regime of continental shelf delimitation, firstly because most delimitations have already been concluded, secondly because the Law of delimitation is primarily a product of international jurisprudence, and thirdly because fundamental principles of the Law of the Sea (such as equitable principles, special circumstances) apply mutatis mutandis to both regimes (Article 74 and 83) with necessary adjustments to account for differences in the specific rights and resources associated with EEZ.

In the matter of the Bay of Bengal Maritime Boundary Arbitration between the People's Republic of Bangladesh and the Republic of India[76], the arbitral tribunal recognised that "*the importance of stable and definitive maritime boundaries is even more essential when the exploration and exploitation of the resources of the continental shelf are at stake. Such ventures call for important investments and the construction of offshore installations*…".

It must be conceded that the judicial delimitation of maritime zones is not the usual path. However, the first decisions of the ICJ for resolving delimitation disputes in the Mediterranean were limited to recording the applicable rules, which in turn led to the adoption of conventions for drawing delimitation lines[77].

The reasons for attempting any form of delimitation are economic interests, particularly regarding energy resources. Even energy companies themselves fund the delimitation by

[76] https://pca-cpa.org/fr/cases/18/

[77] Libyan Arab Jamahiriya-Malta Convention (following the Continental Shelf ICJ Judgment of1985 https://www.icj-cij.org/case/68), Tunisia/Libyan Arab Jamahiriya Convention (following the Continental Shelf ICJ Judgment of 1982 https://www.icj-cij.org/case/63).

resorting to judicial resolution of the dispute. The ICJ Maritime Delimitation in the Area between Greenland and Jan Mayen Judgment (Denmark v. Norway[78]) took into account the parties' desire for economic factors to be considered, marking a significant shift in the Court's approach.

The methodology of delimitation was established by the judgment on maritime delimitation in the Black Sea (Romania v. Ukraine)[79], and has gradually stabilized into three phases based on the principle of equidistance as well as the principle of equitable solution:

- Stage 1: A provisional median line is drawn in the disputed area, with the exception of special circumstances. Only those points that have EEZ and continental shelf rights, such as islands, are taken into consideration (Bangladesh/Myanmar[80]).
- Stage 2: The median line is adjusted (according to existing geographical or non-geographical relevant circumstances) to achieve an equitable result.
- Stage 3: The provisional result is filtered: an ex post facto check for non-disproportionality is conducted to avoid unfair results.

Additionally, the ICJ and arbitral tribunals agree that the indicated delimitation line should be unified for all maritime zones. This "single boundary" logic does not arise from the LOSC but reflects state practice, which was not applied in the first delimitation by the ITLOS in case no. 16 delimitation of the maritime boundary in the Bay of Bengal (Bangladesh/Myanmar)[81]. The Tribunal extended the delimitation line of the continental shelf to its full extent, leaving aside the portions of the EEZ of the two countries that did not overlap. This delimitation created a gray area, resulting in the continental shelf of the gray zone belonging to Bangladesh, while the water column above it was part of Myanmar's EEZ.

Artificial installations can serve as a catalyst for collaborative initiatives and usher in a new era of freedom and flexibility in the management of maritime zones. From the very first delimitation decision in Federal Republic of Germany/Denmark and Federal Republic of Germany/Netherlands (Judgment of 20.02.1969 by the ICJ[82]), it was determined that the presence of energy resources on the continental shelf does not create a demand for awarding a fair and equitable share. However, among the factors to be considered in negotiating the delimitation line are the physical and geological structure and natural resources. This issue resurfaces in every delimitation involving energy elements and has provided the basis for a

[78] https://www.icj-cij.org/case/78
[79] https://www.icj-cij.org/case/132
[80] https://www.itlos.org/index.php?id=108
[81] https://www.itlos.org/index.php?id=108
[82] https://www.icj-cij.org/index.php/case/51

series of joint exploitation agreements for energy resources that often complement delimitation agreements.

In the same context, the Tunisia/Libyan Arab Jamahiriya Delimitation[83] is of particular interest: Regarding the achievement of an equitable result, the Court recognized that "*economic considerations cannot be taken into account for the delimitation ... they are virtually extraneous factors since they are variables which unpredictable fortune or calamity ... might at any time cause to tilt the scale one way or another*." In practice, the presence of energy installations was considered in the border area as '*indicia'* of the parties' behavior. Conversely, in the Libyan Arab Jamahiriya/Malta Delimitation[84], the presence of natural resources was not considered in drawing the final delimitation line. In the Guinea-Bissau/Senegal case[85], the notion of luck reappeared in the sense that the uncertainty about the presence or absence of specific economic factors constitutes an inadequate basis for delimitation.

In conclusion, economic factors are not taken into account during delimitation, and the presence of energy installations, unlike access to fishing resources (as seen in the Barbados/Trinidad and Tobago case[86]), does not generally influence the delimitation line. Resource-related criteria have been treated more cautiously by the decisions of international courts and tribunals, which have not generally applied this factor as a relevant circumstance. This approach is confirmed in the Delimitation case between Nicaragua and Colombia[87]. Nowadays, energy activities are increasingly being solidified as a significant factor considered in judicial decisions, to the extent that the parties' consent to their presence either directly or indirectly. The Court views the licensing of such activities or the physical presence of energy installations as 'effectivités' for determining the existence of sovereign title over the disputed area. This approach is also followed in the delimitation case between Guyana and Suriname[88]. The distinction between temporary and permanent impacts of each party's actions refers to the Aegean Sea Continental Shelf case (Greece v. Turkey[89]), which Suriname referenced. This distinction also arises in the case of provisional measures between Ghana and Côte d'Ivoire in the Atlantic Ocean[90]. The Special Chamber of the ITLOS acknowledged that "*the rights of the coastal State over its continental shelf include all rights necessary for and connected with the exploration and exploitation of the natural resources of the continental shelf and that the exclusive right to access to information about the resources of the continental shelf is plausibly among those rights*". Abruptly and completely halting all operations at existing energy installations would

[83] https://www.icj-cij.org/case/63
[84] https://www.icj-cij.org/case/68
[85] https://www.icj-cij.org/case/85
[86] https://pca-cpa.org/en/cases/104/
[87] https://www.icj-cij.org/case/154
[88] https://pca-cpa.org/en/cases/9/
[89] https://www.icj-cij.org/case/62
[90] https://www.itlos.org/en/main/cases/list-of-cases/case-no-23/

cause significant damage - a solution that aligns with energy market demands and protects existing energy structures. Furthermore, any energy activity at sea requires substantial financial investments, and given technological conditions, it is difficult to distinguish between preliminary actions and the actual process of exploiting each country's energy resources. This distinction is a critical element in the obligation to cooperate to find a provisional solution to delimitation disputes.

5.4 Settlement of Disputes

The LOSC incorporates the principles of the Charter of the United Nations[91] in its approach to resolve disputes. As per Article 2(3) of the Charter, all states shall settle their international disputes by peaceful means, whereas Article 33(1) stipulates that the parties to any dispute, the continuance of which is likely to endanger the maintenance of international peace and security, shall, first of all, seek a solution by negotiation, enquiry, mediation, conciliation, arbitration, judicial settlement, resort to regional agencies or arrangements, or other peaceful means of their own choice. It is therefore understood that for any disputes relating to the competences of States at sea, States must apply the basic rule of peaceful settlement of disputes, having the free choice of one or more of the indicative methods set out in the Charter[92].
Part XV of the LOSC lays down a comprehensive system for the settlement of disputes and is composed of three sections:

- The first section (Articles 279-285) reaffirms the fundamental principle of settling disputes concerning the interpretation or application of LOSC by peaceful means in accordance with Article2(3) of the UN Charter, as well as the principle of free choice of settlement method indicated in Article 33(1) of the Charter (negotiations, good offices, mediation, conciliation, enquiry). However, if the parties cannot agree on how to settle or have not excluded Party XV, then the provisions of Section 2 (Articles 286 - 296) are triggered.

  A relevant example is the territorial maritime border dispute between the State of Israel and the Republic of Lebanon over the Qana and Karish gas fields, which was resolved after nearly two years of negotiations. Both countries laid claim to different maritime borders for decades, which became a matter of concern after the discovery of massive deposits of natural gas off the Israeli coast in 2010. Negotiations between the two

[91] https://www.un.org/en/about-us/un-charter
[92] Roukounas E., Public International Law, 4th Edition, Nomiki Bibliothiki, 2021, p.353

countries were continuously delayed and postponed until 2022, when American diplomat Amos Hochstein took responsibility for mediating the negotiations. The negotiations led to an agreement signed by Israel and Lebanon in 2022 and guaranteed by the US, which established a maritime boundary and ended the dispute between the two countries, opening the way for each to exploit the natural resources of the area[93].

- If parties to a dispute fail to reach a settlement by peaceful means of their own choice, they are obliged to resort to the compulsory dispute settlement procedures under the provisions of Section 2 (Articles 286 – 296). Hence, any dispute concerning the interpretation and application of the LOSC shall be submitted at the request of any party to the court or tribunal having jurisdiction under the second Section of this part of the LOSC. The mechanism established by the Convention provides for four alternative means:

  (a) the International Tribunal for the Law of the Sea established in accordance with Annex VI (for all the disputes and applications submitted to it under the LOSC as well as matters for which it has been granted jurisdiction by other agreements. It has the power to order Interim Measures. Within it, the Seabed Dispute Chamber and the three-member ad hoc Chamber are provided for),
  (b) the ICJ,
  (c) an arbitral Tribunal constituted in accordance with Annex VII (it will have jurisdiction if no other means have been chosen),
  (d) a special arbitral Tribunal constituted in accordance with Annex VIII for one or more of the categories of disputes specified therein.

  As per Article 287 LOSC, the state Parties shall declare which of the aforementioned means they choose for the settlement of disputes by a written declaration deposited with the Secretary-General of the UN. Unless the Parties determine otherwise, arbitration in accordance with Annex VII shall be deemed accepted. Article 288(3) stipulates that the Seabed Disputes Chamber of the ITLOS established in accordance with Annex VI, and any other chamber or arbitral tribunal referred to in Part XI, section 5, shall have jurisdiction in any matter which is submitted to it in accordance therewith.

[93] https://en.wikipedia.org/wiki/Israeli–Lebanese_maritime_border_dispute#cite_note-Resolution-1

- Section 3 (Articles 297 – 299) introduces limitations and exceptions to applicability of the second Section regarding the jurisdiction of the abovementioned courts and tribunals. Inter alia, disputes relating to sovereign rights of States are compulsorily excluded, while the parties may choose to exclude disputes relating to sea boundary delimitations (which may, however, be submitted to conciliation under Annex V at the request of any party) and disputes concerning military activities (Article 298). Annex V provides for conciliation where sometimes the choice of method is optional (Article 110) and sometimes compulsory (11-14). A characteristic example of recent successful conciliation is the Timor Sea Conciliation case (Timor-Leste v. Australia). In 2016, the Government of the Democratic Republic of Timor-Leste initiated compulsory conciliation proceedings against the Government of the Commonwealth of Australia, pursuant to Article 298 and Annex V of the LOSC[94].

  It must be also stressed that Greece had initially declared that it accepts the jurisdiction of ITLOS for all disputes relating to the LOSC, but in 2015, by its declaration, it set limits on the court's jurisdiction, triggering the optional exception to Article 298 on sea boundary delimitation disputes and military activities.

5.5 Remarkable Points

After presenting an an overview of the most important provisions of the LOSC regarding the framework for offshore wind energy development, as well as key delimitation issues and the settlement of disputes, it is crucial to highlight the following remarkable points.

1) Article 300 LOSC stipulates that states shall fulfil their obligations and exercise their rights in good faith without abusing other states' rights, while Article 301 refers to the general provision of peaceful uses of the seas. However, in cases where the management of common goods is undertaken and a unified approach is required for extralegal reasons, the Convention mandates cooperation, albeit with varying degrees of intensity depending on the circumstances. There are two distinct obligations: a positive obligation to act (interested states must make every effort to reach a provisional agreement) and a negative obligation to refrain (they must continue in good faith not to jeopardize or hinder the reaching of a final agreement). Hence, cooperation can take various forms (for instance, the Argentina-United Kingdom Joint Declaration on Cooperation Over Offshore Activities in the

[94] https://pca-cpa.org/en/cases/132/

Southwest Atlantic[95]. Beyond the possibly relevant provisions regarding the obligation of good faith in seeking provisional solutions, and Article 142 concerning the obligation to take into account the rights and interests of the coastal state, the LOSC does not explicitly include a mandatory cooperation obligation for the joint exploitation of common resources. The Convention mandates states to behave in the prescribed good faith manner, rather than to achieve a specific outcome. This obligation implies an indirect temporal limitation, and if the informal reasonable timeframe lapses without action, parties are obligated to resort to compulsory dispute settlement procedures (Part XV).

2) Coastal State jurisdiction in the EEZ may be exercised only after a specific declaration. This prerequisite emerges a contrario by Article 77(3) on the continental shelf, which establishes that the rights of the coastal State over the continental shelf are independent from the effective or symbolic occupation, as well as of any express declaration. While the continental shelf is a natural extension of the land (ICJ in its judgment on the continental shelf of the North Sea of 1969), this idea, evidently, cannot be extended to the EEZ, which is crucial for the development of soft energy (wind, waves, currents).
3) The application of the Convention is inter partes. Although parts of the LOSC may be considered Customary Law, the Procedural Law provisions are unlikely to be considered to be so, in contrast to Substantive Law provisions such as the EEZ (Article 74) and the continental shelf (Article 83) due to general practice. Hence, states that are not parties to the LOSC are not bound by Procedural provisions such as Article 297. In this case, a member state could invite a third state to arbitration and conciliation.
4) The Dispute concerning delimitation of the maritime boundary between Ghana and Côte d' Ivoire in the Atlantic Ocean (Ghana v. Côte d' Ivoire, Judgment of 23.09.2017, ITLOS[96]) may be enriching in our analysis.

   This case concerned the delimitation of maritime zones between the two states, i.e. not exclusively matters of energy law. However, the fact that Ghana had engaged in oil exploration and extraction in the disputed area prior to its delimitation led the ITLOS to an interesting decision at the provisional measures stage. The Court did not consider this exploration and extraction to be a violation of International Law.

[95] Wälde T.W. and McHardy A., 'Argentina-United Kingdom: Joint Declaration on Cooperation Over Off-shore Activities in the South West Atlantic', International Legal Materials, 1996, 35(2), pp. 301–308, available at https://www.cambridge.org/core/journals/international-legal-materials/article/abs/argentinaunited-kingdom-joint-declaration-on-cooperation-over-offshore-activities-in-the-south-west-atlantic/30681F15708B9B6F8DDD9460F402FD46

[96] https://www.itlos.org/en/main/cases/list-of-cases/case-no-23/

Indeed, it held that Ghana's operations should not have been stopped prematurely as this would have endangered the fragile marine environment and the damage could not be repaired, but also because it considered the economic loss that Ghana would suffer. Ghana was obliged to share the results of its exploration with Côte d'Ivoire in the event that the area where the mining operations were carried out should eventually fall under the sovereignty of Côte d'Ivoire once the dispute had been resolved.

The Ghana/Côte d'Ivoire case illustrates the fact that international judicial institutions consider many different elements, including the need to protect the environment, in order to resolve disputes relating to our analysis. This case is significant for the case of countries such as Greece and proves that an energy company could start in good faith some surveys regarding the wind potential in a "disputed" area prior to its delimitation.

5) It could be concluded that LOSC itself promotes arbitration as a method of dispute settlement. While there is the free choice of the parties to settle a dispute by any peaceful means of their own choice (Article 280), if no settlement has been reached (Article 281), then LOSC stipulates in Article 287(3) that a state party to a dispute not covered by a declaration in force pursuant to Article 287(1) shall be deemed to have accepted arbitration in accordance with Annex VII.

6. Legal Issues about Investments

All the aforementioned points have been discussed in the context of creating the conditions for the development of offshore wind energy. After choosing the suitable site, one should then examine how the investment is developed. It becomes evident that there are two main phases to develop offshore wind projects; the first involves the coastal state, which shall exercise its rights under the Law of the Sea and establish the appropriate zones to harness wind further from its coasts, whereas the second involves also investors to which the state will assign rights for the exploitation of the wind. In each phase, the responsibility shifts accordingly. Hence, once the maritime zone issues have been resolved and the offshore wind project is finally underway, disputes pertaining to the investment then arise.

6.1 Arbitration

Disputes typically occur in the development or preconstruction stage (permissions, consents, licenses), the construction stage (including commissioning and testing) and the operational stage. It is possible that the host state will obtain the upper hand and the investor's situation may be described as a 'prisoner's dilemma', stuck with the project and with no choice but to accept unfavorable renegotiations of the investment terms[97]. In general, efforts have been made to secure as favourable terms as possible vis-à-vis the state by seeking internationalization of contracts (to break away from the scope of domestic law which is perceived by foreign investors as a set of restrictions on investment) and opting for dispute resolution through ICSID investment arbitration.

By their nature, energy projects are capital-intensive and typically involve long-term agreements, whereas the sector is also subject to manifold changes. Large-scale projects are characterised by complex contract structures with multiple contracts and sub-contracts between multiple parties for various works. Nowadays, energy activities have transcended national borders, with the result that the energy sector and its activities have an inherently international and cross-border character. In contrast to the evolving nature of the industry is the investors' need for stability. Investors seek to keep the legislative, regulatory, political and economic framework of their project as stable as possible. Finding the right balance between guaranteeing a stable and investment-friendly environment, on the one hand, and allowing necessary evolution, including a state's right to regulate, on the other, is the equilibrium.

[97] Scherer M., International Arbitration in the Energy Sector, Oxford, 2018, p. 16.

However, disputes may arise between commercial companies (commercial disputes), between investors and states (investor-state disputes, such as dispute over the resources of the state) and between states (Public International Law disputes, such as disputes over the sovereignty of the state over energy resources). Of them, the last two are mainly governed by International Law, while the first are governed by the applicable domestic law.

Disputes between the host State and the investor and/or its investment are more common but also more complex in terms of the mechanism for their resolution. A host State dispute with the investor and/or its investment arises when one of the parties, usually the State, breaches the applicable agreement. Most international investments are governed by Bilateral Investment Treaties (BITs) signed between states that regulate the terms on which investments will be made from one state to another. It should also be noted that a breach of a provision contained in such a treaty may result in the international responsibility of the state towards the contracting state. In such a case the dispute will be inter-state and public international law will apply. Investor and/or investment disputes with the host State, whether covered by BITs that include a dispute settlement clause or not, are generally resolved by ad hoc arbitral tribunals, through the establishment of ad hoc judicial institutions, or by arbitral tribunals constituted by an already selected Arbitration Centre. One such Arbitral Centre, which often handles disputes between a State and an investor, is the International Center for Settlement of Investment Disputes (ICSID). It is an international intergovernmental organisation and under the auspices of the World Bank Group, arbitral tribunals are established to resolve investment disputes on the basis of the ICSID Rules. Crucial is the double-barreled test followed by an arbitral tribunal to ascertain its jurisdiction under Article 25 of the ICSID Convention (objective test) and the relevant provision in the instrument embodying its consent to ICSID (the subjective test). The double-barreled test is mostly applied by tribunals constituted under the ICSID Convention but non-ICSID tribunals have found guidance in the “objective” criteria as well. In order for ICSID to hear a dispute, it must arise from a 'foreign direct investment', which is defined in case law[98] (4 criteria: contribution of assets, creation of value, duration, involving risk). Indeed, a crucial element for recourse to international investment arbitration between an investor and a host State is the inclusion of the concept of investment (Article 25(1) of the ICSID Convention[99]).

In the case of inter-state disputes, States may choose a number of methods for resolving their dispute as provided for in Article 33 of the UN Charter. Of these methods, negotiation, good offices, mediation, conciliation and enquiry are classified as diplomatic or extra-judicial methods of dispute settlement and relate mainly to the sovereignty of States over energy resources in cases of non-delimitated maritime zones.

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[98] Salini Costruttori S.p.A. and Italstrade S.p.A. v. Kingdom of Morocco, Decision on Jurisdiction 23 July 2001, ICSID Case No. ARB/00/4, par. 52

[99] https://icsid.worldbank.org/sites/default/files/ICSID%20Convention%20English.pdf

However, given the important economic, political and social issues, arbitration has been the most popular means to resolve international disputes in the sector. Its primary place is signed by the fact that 78% of the practitioners surveyed believe that arbitration is well suited to the energy industry[100]. Moreover, a large proportion of ICC cases are energy-related arbitrations, making it one of the most case-heavy industry sectors for ICC arbitrations. The number of energy disputes is also likely to continue to grow in the future as it is estimated that USD 67 trillion of investment will be required to supply the world's energy needs up to the year 2040[101]. In view of this, the international arbitration will continue to play a significant role in enforcing sustainable development objectives and addressing climate change and investment disputes in the energy sector.

In recent years, arbitration is seen as the most suitable forum for resolving energy disputes, while most respondents select London as their first choice of arbitral seat. Reasons include "the stability of its commercial law". The energy sector likes arbitration because it is seen as flexible, neutral, enforceable and benefitting from the technical expertise of arbitrators. But the sector wants to see innovation driving more efficiency and early decision-making. The features of arbitration considered to be the most important to the energy sector were neutrality (63%), choice of arbitrators / technical expertise (60%), and the international enforceability of arbitral awards (60%) owing to a coherent and restrictive enforcement regime under the New York Convention.

In terms of drafting the contract, the parties' predominant goal shall be to avoid delays and conclude the project on time and that is the reason why multi-tiered or escalation clauses[102], such as negotiation, followed by mediation and then finally arbitration, are often provided for in the agreements. Parties should keep such clauses as simple as possible to avoid uncertainty and disputes over the meaning and effects, taking also into consideration the IBA Guidelines for Drafting International Arbitration Clauses[103]. Furthermore, the parties increasingly agree in force majeure, rebus sic stantibus, stabilization, freezing and intangibility clauses.

Despite its recent growth, the renewables sector, compared to the conventional energy sector, is still developing and industry practices for wind projects have not been finally settled. One of the most important milestones of any renewable energy project is the connection to the grid as it is a prerequisite for the project to become operational and generate cash flow. In case of offshore wind farms, because of difficulties in building offshore converter platforms, substantial delays in achieving grid connection have been reported. For instance, a dispute in

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[100] Queen Mary University of London, International Arbitration Survey, 2013, https://arbitration.qmul.ac.uk/research/2013/

[101] IEA, World Energy Investment Outlook: Executive Summary (2016)

[102] Pamboukis C., Arbitration, International, Commercial, Domestic, Investment, Nomiki Vivliothiki, 2024

[103] https://www.ibanet.org/MediaHandler?id=D94438EB-2ED5-4CEA-9722-7A0C9281F2F2

relation to the offshore wind farm project Borkum West in Germany concerned the question of whether the transmission system operator responsible for the grid connection of the offshore wind farm could be held liable for the damages resulting from the delayed connection to the grid (resulting in extra costs and lost feed-in remuneration). Following three-and-a-half years of court proceedings in the first instance, the Regional Court of Bayreuth dismissed the 144 million euros claim brought by Trianel against Tennet in Case 13 HK O 44/12 Judgment (3 March 2016)[104].

6.2 Energy Charter Treaty (ECT)

When considering investment issues, reference to the Energy Charter Treaty (ECT) is essential[105]. The ECT is a multilateral trade and investment agreement on energy regulation and investment protection (principally the protection of fossil fuel investment), an international instrument which sought to provide a '*multilateral framework for energy cooperation*'. Signed in 1994, as a baby of the post-Cold War period, under the assumption that energy would be a means of cooperation, it entered into force in 1998, covering investment promotion and protection of foreign investments (Article 10 stipulates a Fair and Equitable Treatment and a so-called umbrella clause), transit, trade, environmental protection, expropriation issues (Article 13 prohibits expropriation without adequate and prompt compensation) and dispute settlement mechanisms for the resolution of disputes between investors and host countries[106].
More precisely, it provides for the possibility of recourse to domestic or international judicial bodies, mainly arbitration, after the parties to the dispute have tried and failed to reach an amicable settlement, and the possibility of recourse to mediation. Two mechanisms are included: investor - state arbitration for investment disputes (Article 26) and state-to-state binding arbitration for basically all disputes that might arise under the ECT (Article 27), with the exception for disputes concerning competition and environment. According to article 26, the foreign investor has three options to have the dispute settled: a) domestic courts or tribunals of the host State, b) any previously agreed dispute settlement procedure, c) international arbitration (ICSID, UNCITRAL, Arbitration Institute of the Stockholm Chamber of Commerce).
Article 18 is divided into sections regarding the sovereignty over primary physical energy resources, the ability of a political community to have the authority to control, regulate and

[104] Hanke S., Trianel loses legal dispute with Tennet, Energate messenger, 2016, https://www.energate-messenger.com/news/163018/trianel-loses-legal-dispute-with-tennet
[105] https://www.energycharter.org/process/energy-charter-treaty-1994/energy-charter-treaty/, greek ratification Law 2476/1997 (Government Gazette 58/A/18.04.1997).
[106] Hobér, K. The Energy Charter Treaty: A Commentary, Oxford: Oxford University Press, 2019, p. 6

manage their own energy, also the right of conscious individuals, communities, and peoples to make their own decisions on energy generation, distribution and consumption in a way that is appropriate within their ecological, social, economic, and cultural circumstances, provided that these do not affect others negatively. This definition is quite clear when it comes to the land-based energy sources. The question however arises more obviously for energy sources that are located outside the sovereign territory of a state. As article 18(1) stated that '*state sovereignty and sovereign rights over energy resources … must be exercised in accordance with and subject to the rules of international law'*, and International Maritime Law is a crucial reference point for the application and interpretation of this provision[107].

Overall, the ECT was seen as an important part of an international effort to build a legal foundation for energy security and to strengthen the rule of Law on energy issues. The problem with the treaty is that it did not give preferential treatment to clean energies[108]. By virtue of the ECT, energy companies are entitled to sue governments over policies that damage their investments and it had been used to launch billion-dollar lawsuits against measures to shut or restrict fossil fuel projects.

The European Union is a Contracting Party to that Treaty, together with Euratom, 22 EU Member States (as of 26 June 2024), as well as Japan, Switzerland, Turkey and most countries from the Western Balkans and the former Union of Soviet Socialist Republics, with the exception of Russia and Belarus. In terms of the EU Member States, Italy unilaterally withdrew in 2015. France, Germany, Poland and Luxembourg have already exited the ECT. Slovenia, Portugal and Spain have also initiated a procedure of withdrawal, as it is argued that the ECT is no longer in line with the Paris agreement and EU targets. In line of this, the Intergovernmental Panel on Climate Change (IPCC) has warned that international investment agreements like the ECT could '*be used by fossil fuel companies to block national legislation aimed at phasing out the use of their assets'*. To limit global warming to 1.5°C above preindustrial levels, governments must bring global energy-related CO2 emissions to net zero by 2050. This would include phasing out or retrofitting high-emitting infrastructure and no investments in new fossil fuel supply. This will inevitably impact foreign investments in the energy sector. The foreign investors could sue governments for adopting measures in the energy sector which would allegedly be in breach of the ECT's substantive standards on 'fair and equitable treatment' or 'indirect expropriation' for which compensation is deemed required.

The Commission has negotiated a modernisation of the ECT on behalf of the EU to bring it in line with the Union's climate and energy goals, and its investment protection framework. However, due to a lack of majority support from the member states, the EU has not voted for

[107] Leal-Arcas, R 2018, Commentary on the energy charter treaty, Edward Elgar Publishing Ltd, p. 260

[108] https://energy.ec.europa.eu/topics/international-cooperation/international-organisations-and-initiatives/energy-charter_en

the modernisation of the ECT. Over concerns that the ECT protects fossil fuel investments, the Minister of State for Energy Security and Net Zero announced on 22 February 2024 that the UK will leave the Treaty to support the government's plans for a transition to net-zero[109]. Moreover, EU countries unanimously agreed to quit also the treaty, and with the two decisions adopted on 30 May 2024, the Council of the EU gave the final green light for the EU and Euratom to leave the ECT. Their withdrawal will take effect one year after the depositary has received the notification[110]. Furthermore, the Union and its member-states have also reached an agreement to put an end to the continuation of intra-EU arbitration proceedings under the ECT that are contrary to EU Law. More specifically, the agreement is aimed at clarifying, for the benefit of courts and arbitral tribunals, that the arbitration clause provided in the ECT does not apply – and never has - in the relations between an EU investor and an EU country[111]. The agreement follows the Komstroy judgment[112], in which the Court of Justice held that the arbitration clause of the ECT must be interpreted as not applicable to disputes between a member state and an investor from another member state concerning an investment made by the latter in the first member state. In other words, under Union Law, within that framework, arbitration awards are invalid and as such unenforceable anywhere in the Union.

To conclude, it must be noted that the adoption of the amendments requires unanimity among the present Contracting Parties and voting at the Energy Charter Conference, whereas withdrawal is possible under Article 47, triggering the '*sunset clause'* under which existing investments would remain protected for another 20 years after withdrawal. At the very least, the ECT debate has opened up a space for governments to discuss and reconsider what types of investments should be encouraged and protected both at home and abroad and to bring greater coherence in their investment and climate policies. At present, it is clear that a more suitable instrument is necessary to accelerate the clean energy transition. In its place the global community should create an investment framework, whether multilateral or a series of bilateral agreements that provides substantive protections to renewable investments to meet the green finance gap while mitigating the power asymmetries afforded to investors at the expense of a state's regulatory prerogative.

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[109] https://www.consilium.europa.eu/en/press/press-releases/2024/06/27/energy-charter-treaty-eu-notifies-its-withdrawal/, https://www.linklaters.com/en/insights/blogs/arbitrationlinks/2024/february/uk-to-exit-the-energy-charter-treaty

[110] Abnett K. and Mandia D., EU agrees to quit energy investment treaty over climate concerns, 2024, available at https://www.reuters.com/business/energy/eu-agrees-quit-energy-investment-treaty-over-climate-concerns-2024-05-30/

[111] https://ec.europa.eu/commission/presscorner/detail/en/IP_24_3513

[112] https://curia.europa.eu/juris/liste.jsf?language=en&td=ALL&num=C-741/19

7. Odyssey of Greece's Offshore Wind Landscape

After a thorough analysis of the general prerequisites regarding the maritime zones and the relevant investment issues, an attempt will be made to apply these findings to the case study of Greece. As indicated by the title of this chapter, this section is devoted to the intricate journey of Greece in the offshore wind industry, as although its comparative advantages, due to the country's strategic location and favorable climatic conditions, this energy source remains untapped.

7.1 Seizing opportunities

Greece ranks among the top countries worldwide in terms of wind energy penetration in domestic electricity generation. As per current available data, in 2023, Greece had a share of wind generation in the electricity mix at 22%[113]. Additionally, the Aegean Sea is among the most favoured regions in Europe and a large-scale offshore wind development could enhance Greece's geopolitical position. The country could potentially become an energy hub in the Eastern Mediterranean. For instance, ships could dock at ports for refueling using electricity generated from wind turbines.

The installation of offshore wind farms can lead to a GDP boost of up to €1.9 billion per year on average over the period 2024-2050, boosting employment and providing significant benefits to the economy and society. Through a series of actions, such as developing network infrastructure, implementing appropriate licensing procedures, mobilizing private investment, and strengthening the supply chain, Greece will be able to create positive industrial, economic and social impacts, while enhancing energy security and the reliability of the electricity system. The aim for the country is to be in the next decade not only energy independent, but also energy exporter.

7.2 Navigating Challenges

Despite the very high wind potential of the Greek seas, the available marine areas in Greece suitable for fixed-bottom wind turbines are limited. Thus, the evolution of the floating platform technology can provide a significant boost to the exploitation of the offshore wind potential in Greece, bypassing the difficulties posed by its complex, intricate and rough seabed

[113] https://ember-climate.org/insights/research/global-electricity-review-2024/global-electricity-source-trends/#wind

morphology[114]. Installation at a sufficient distance from residential areas will also enable the unhindered development of the tourism, the main pillar – for now – of the Greek economy. However, the challenges for Greece unfortunately do not stop here.

Greece's steepening seabed morphology in conjunction with its territorial sea regime in the Aegean Sea (which currently extends to six nm, while pending the delimitation of an EEZ therein) limits the available suitable areas for either fixed-bottom or floating projects.

In view of this, the need of solving the issue of the maritime zones under LOSC occurs for one more time. Greece signed the Final Act of the United Nations Convention on the Law of the Sea on 10th December of 1982. It was entered into force on 16th November of 1994 and was ratified with the Law 2321/1995 (Government Gazette A'136). Hence, in Greece, under LOSC, floating wind turbines can be installed in the territorial sea, in the EEZ or in an energy zone.

7.2.1 Territorial Sea

The extent of the coastal zone of Greece was defined in 1936 as 6 nm from the coast (Law 230/1936 and later legislative decree 187/1973). However, the limit of 10 nm of the coastal zone was explicitly maintained with regard to the airspace, based on the Decree of 6 September 1931, in conjunction with Law 5017/1931. Under a customary rule of the Law of the Sea, Greece is entitled to extend its coastal zone up to 12 nm. This right is sovereign, it is exercised unilaterally and is therefore not subject to any kind of limitation or exception and is not open to challenge by third States. Turkey itself has, since 1964, extended its coastal zone to 12 nm in the Black Sea and the Mediterranean. Greece has explicitly stated that it reserves the right to exercise at any time its right to extend its coastal zone up to 12 nm. Greece has already extended by Law 4767/2021 its coastal zone to 12 nm in the Ionian Sea. International jurisdictions unreservedly recognise the right of all islands, islets and rocks to a 12 nm coastal zone and that the right to a coastal zone takes precedence over the right to a continental shelf/EEZ.

7.2.2 EEZ

The EEZ status, which Greece should declare, provides with greater efficiency. To date, Greece has done so in the area south of Crete and Rhodes (under Article 2 of the Law by which Greece

[114] Melissas D., An optimal strategy for initiating and efficiently developing the floating off-shore wind energy sector in Greece, Renewable Energy Law and Policy Review, Volume 10, Issue 3-4, p. 25-31, Lexxion Publisher, 2022

ratified the delimitation agreement with Egypt[115]), while the declaration of the EEZ is pending in the Ionian Sea, where Greece has a recent delimitation with Italy (2020 Agreement[116]).

It must be noted that the Mediterranean is a semi-enclosed sea. Under the LOSC, there is no differentiation between the semi-enclosed seas with regard to the rules for establishing and delimiting the zones of jurisdiction. It is simply provided in Article 123 that states bordering enclosed or semi-enclosed seas should cooperate with each other in exercising the rights and fulfilling the obligations recognised by the Convention. The limited width of the Mediterranean Sea does not allow for the full development of all the maritime zones of the coastal coasts, with the result that the continental shelf and EEZ cannot at any point reach the maximum limit of 200 nm, and in places such as the Aegean, the coastal zones cannot even have the maximum limit of 12 nm of coastal zone. The particular geomorphology of the Mediterranean makes the delimitation of maritime zones essential and the prospect of exploiting natural resources depends entirely on the clear definition of the boundaries of the zones of national jurisdiction. Accession to delimitation agreements depends on political and diplomatic relations.

In this point it must be highlighted Greece's referral (INFR(2021)2226) to the Court of Justice of the EU by the Commission as in 2023 Greece was accused of failing to ensure the implementation of Directive (EU) 2014/89 of the European Parliament and of the Council[117] on maritime spatial planning, as it has not yet prepared and submitted its maritime spatial plans to the European Commission[118]. This failure underlines exactly the difficulty in the area. However, it must be said that the filing of coordinates or maps does not constitute a substantive title of delimitation, nor does it have inherent legal force, it merely indicates the claims and their scope as understood by each state individually. For Greece to be able to submit coordinates that delimit its (and therefore the EU's) borders, it must have resolved first the delimitation issues.

- Turkish-Libyan Memorandum

Turkey, Libya, Syria, and Israel, four coastal states in the Eastern Mediterranean, are not parties to the Convention and are not formally bound by its provisions. The same is not true of the provisions that constitute Customary International Law.

Considering the "Turkish-Libyan Memorandum" in 2019[119], Greece has argued that Turkey and Libya do not have opposite or adjacent coasts and, therefore, do not share maritime boundaries. Consequently, there is neither a geographic nor a legal basis for a maritime delimitation

[115] https://treaties.un.org/Pages/showDetails.aspx?objid=080000028058a22f&clang=_en
[116] https://www.un.org/depts/los/LEGISLATIONANDTREATIES/STATEFILES/GRC.htm
[117] https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32014L0089
[118] https://ec.europa.eu/commission/presscorner/detail/en/ip_23_6345
[119] https://www.un.org/depts/los/LEGISLATIONANDTREATIES/PDFFILES/TREATIES/Turkey_11122019_%28HC%29_MoU_Libya-Delimitation-areas-Mediterranean.pdf

agreement, given that the island territories of the Dodecanese and Crete, located between Turkey and Libya, belong to Greece. Furthermore, the projection of Turkey's coasts, where the base points are positioned, overlaps with the projection of the coasts of the Greek islands. Hence, Greece responded with the dated 2020 EEZ delimitation agreement with the Arab Republic of Egypt, legally protecting its sovereign rights in the Eastern Mediterranean and delimiting EEZ in the Eastern Mediterranean for the first time.

- *Thought number 1*

  The case of Nicaragua – Colombia[120] is very important and could be used to solve the issue of Libya-Turkey Memorandum, as it is highlighted that the islands near Nicaragua and far from mainland Colombia had a continental shelf/ EEZ. It is sufficient to mention that in the case of Costa Rica/Nicaragua[121], islands of much smaller size (Great Corn and Little Corn) were granted half effect.

  Based on the above, the Court would study Egypt's claims in the region, without considering the Libya-Turkey agreement, as it has been signed by other states and is therefore not binding on Egypt (*res inter alios acta*). The Tribunal would make a de novo delimitation and if it considers that Egypt's claims can go as far as that region, it will award the area to Egypt and ask Libya to withdraw. It is noted that if Libya withdraws from the area, then half of the delimitated zone will be gone. That is why Egypt must go to the Court to resolve the dispute with Libya. Then Greece will be able to assert its rights as well. If, in the meantime, Greece grants licensing and an energy company undertakes in good faith energy surveys about the wind potential, but Libya subsequently disputes the area, and delimitation later places the area under Libya, the company, according to the Ghana/Côte d'Ivoire judgement of ITLOS in 2017[122], will not be liable for compensation. This provides a strong incentive for investors to proceed with surveys. Although this ruling specifically applies to the continental shelf, it can be inferred to apply mutatis mutandis to the EEZ as already discussed. After all, there is an obligation to negotiate in good faith, meaning that there is an obligation of contact, but not of result.

- *Thought number 2*

  A second option to the Turkish-Libyan Memorandum" would be the path of "invalidity". In general, grounds for invalidity in an agreement are typically raised by the parties to the agreement, not by a third party. Violation of jus cogens can be a ground

[120] https://www.icj-cij.org/case/154
[121] https://www.icj-cij.org/node/105546
[122] https://www.itlos.org/en/main/cases/list-of-cases/case-no-23/2017

for invalidity, and the island rule (which is not common law) is jus cogens. Greece, in collaboration with Egypt, could appeal to the Law of the Sea Tribunal to determine whether the islands are producing rights. The court is unlikely to deny this claim, as there are no other states with strong claims in the area. Subsequently, the ICJ would consider the jurisprudence of the Tribunal of the Sea to delimit the area.

- 1976 efforts

A look back in history would show that these are not new issues. In 1976, Greece addressed a communication to the President of the Security Council requesting an urgent meeting on the ground that "*following recent repeated flagrant violations by Turkey of the sovereign rights of Greece in the continental shelf in the Aegean, a dangerous situation has been created threatening international peace and security*." Greece also instituted proceedings in the ICJ against Turkey in "*a dispute concerning the delimitation of the continental shelf appertaining to Greece and Turkey in the Aegean Sea and concerning the respective legal rights of those States to explore and exploit the continental shelf of the Aegean*." Additionally, Greece filed a request for interim measures of protection. Greece achieved only partial satisfaction[123] from Security Council, while the request for interim measures was not granted. The Court decided to rule first on the issue of jurisdiction over the case before addressing the substance[124], and in the absence of jurisdiction, the Court dismissed the application (Aegean Sea Continental Shelf Judgment[125]).

7.2.3 Potential Solutions for Greece

Negotiations on the delimitation of the Aegean with Turkey must continue. Although drilling on the continental shelf may no longer be permitted by 2050, it is essential to secure the right to exploit the EEZ.

- If the states cannot agree on the delimitation of the continental shelf and then the EEZ, or if they cannot reach an agreement solely on renewable energy while excluding other activities such as fishing, Greece could consider an energy zone or a joint venture with Turkey's tolerance. In this latter scenario, an energy company would conduct initial research, evaluation, and testing, and any findings could be shared between the two

[123] Gros, L.,'The Dispute between Greece and Turkey Concerning the Continental Shelf in the Aegean', American Journal of International Law, 1977, 71(1), pp. 31–59.
[124] Papastauridis E., Greek - Turkish maritime disputes from the perspective of international law, ELIAMEP, Polixy Paper 36, 2020
[125] https://www.icj-cij.org/case/62

states, leading to model of joint exploitation based on mutual tolerance rather than mutual agreement.

- Additionally, the option of a compromis (provided that the issues on which the Court is asked to rule are specified in detail and that the agreement to accept it is binding) would pave the way for adjudication by the ICJ or arbitration with a binding result, with the mutual consent of the parties.
- It has also been argued that the possibility of judicial resolution (at least partially) of the Greek-Turkish maritime disputes exists, through another path, but still in The Hague. The basis would be the compulsory resolution of the energy aspects of the Greek-Turkish disputes under the Article 27 of the Energy Charter Treaty, which has been ratified by Turkey, as well. This treaty not only explicitly recognizes, as international conventional law, the principle of sovereignty over energy resources but also provides a legally binding, compulsory mechanism for resolving disputes regarding the interpretation and/or application of the treaty among its Contracting Parties. Hence, they can be referred to an ad hoc arbitral tribunal after written notice, without the respondent Contracting Party being able to refuse the submission of the dispute to international arbitration. Unless otherwise agreed between the Contracting Parties, the UNCITRAL arbitration rules apply, the ad hoc arbitral tribunal is based in the Hague, under the auspices of the Permanent Court of Arbitration.

Of the above options, the delimitation of an EEZ is clearly preferable as it entails more than simply establishing a renewable energy zone or just extending territorial waters to 12 nm (although larger territorial sea means larger EEZ). If Greece declares EEZ, it will allow the extension of its jurisdiction over almost all activities and uses of the sea (fishing, wind energy, wave energy, protection of the marine environment, marine scientific research, artificial islands, constructions, and installations) in a broad maritime area. Additionally, the right to an EEZ will be recognized for all islands, with the exception of rocks that cannot sustain human life or do not have their own economic zone. The adoption of an EEZ in the Aegean will consolidate Greece's presence in this sensitive area, ensuring the political and economic unity of the island space, while effectively addressing the problem of illegal fishing.

To delimit, negotiations in good faith and the exhaustion of all possibilities to reach an agreement are required. Turkey shall be given a strong incentive, because even the most favourable continental shelf and EEZ arrangement would mean for Turkey a smaller area of international waters for operational training and fishing[126]. Given that climate change knows no

[126] Liakouras P., After the Athens Declaration, what?, The news, 2023

borders, emphasizing the opportunities presented by offshore wind energy is crucial in seeking to achieve a beneficial agreement for both sides.

7.3 Legal Framework under Law 4964/2022 & 5106/2024

In July 2022, the Hellenic Parliament passed the long-awaited law on the development of offshore wind projects in Greece, namely chapter H (Articles 65 to 80) of Law 4964/2022[127] (as amended and in force), which is aimed at establishing a coherent framework for the development, licensing, grid connection, and commercial operation of offshore wind projects in the Greek seas, in replacement of relevant past legislation that did not deliver any concrete results. It concerns a national policy measure that is in complete agreement with the EU Strategy on Offshore Renewable Energy toward the achievement of the European Green Deal energy and climate goals for the period up to 2050.

Under this Law, sea areas will be licensed to explore, develop, and operate offshore wind projects in Greece, account taken of environmental, planning, national security and other matters of relevance. The Law sets requirements for applicants and rules for competitive bidding, so that renewable energy developers receive exclusive development rights and operating aid for their projects. In this context, a summary of the main provisions is set forth below:

- Step 1: The Law appoints the state-controlled Hellenic Hydrocarbons and Energy Resources Management Company (HEREMA) as the competent body for exercising the Greek state's exclusive rights for the exploration and exploitation of the offshore wind potential within the country's sea areas. In this respect, HEREMA is responsible for the preparation of a national plan for the development of the offshore wind technology (the OFW National Plan) on the basis of a technical study that shall take into account the main criteria set forth in the Law for the development of offshore wind projects, such as the National Energy and Climate Plan (NECP); the protection of the environment; spatial and maritime planning aspects; national security; and other relevant aspects or criteria like antiquities, monuments, infrastructures and other productive or development activities. The plan is subject to Strategic Environmental Impact Assessment (SEIA) at national level and defines the potential broader sea areas for the development of offshore wind projects (OFW Organized Development Areas), as well as the estimated project capacities to be developed therein. The plan is approved by a joint decision of the competent Ministers.

[127]Governmnet Gazette A 150/30.07.2022

- Step 2: HEREMA prepares technical studies for the designation of specific OFW Organized Development Areas and the terms for the development of offshore wind projects therein, account taken of the aforesaid National Plan. The OFW Organized Development Areas are approved by virtue of individual presidential decrees, initially for the period until 2030 and subsequently for the period beyond 2030, including the determination of the maximum project capacities to be installed in any such area.
- Step 3: Within two months from the publication of the presidential decrees designating each OFW Organized Development Area, HEREMA issues a decision defining the period within which any interested party is entitled to apply for an OFW Exploration License for the development of a project within one or more designated development areas. Each licensing round shall last two months. New licensing rounds may commence after six months from the end of the previous one.

  It is noted that eligible applicants for an OFW Exploration License are EU citizens or legal persons established in an EU member state or in a third country that has concluded multilateral international agreements or a bilateral international agreement with the EU in the field of renewable energy sources. The applicant must also satisfy some minimum technical and financial criteria.

  The OFW Exploration Licenses are not transferrable, and they are valid for three years. They do not entail or grant exclusive exploration rights in the areas concerned, but they are a precondition for the installation of offshore wind projects in any such areas, provided they are successful in the following competitive bidding process for the award of operating aid under the national support scheme for renewable electricity according to Law 4414/2016. Only then will a developer be granted the exclusive rights for the licensing, development, and exploitation of a specific project in a specific OFW Installation Area.
- Step 4: Within two years from the end of the first licensing round for the granting of OFW Exploration Licenses, HEREMA conducts a public consultation process for the delimitation of specific OFW Installation Areas within each OFW Organized Development Area.
- Step 5: Within two months from the end of the aforesaid public consultation process, the Minister of Environment and Energy shall issue a decision setting forth the specific OFW Installation Areas located within the broader OFW Organized Development Areas (for which OFW Exploration Licenses have already been granted) as well as the total capacity that can be installed therein.
- Step 6: Within four months from the issuance of the above ministerial decision (and following another ministerial decision on the competitive bidding process framework

for offshore wind energy capacity in particular according to the Law and state aid clearance from the European Commission) the Regulatory Authority for Energy, Waste and Water (RAEEY) shall launch a competitive bidding process for the granting of operating aid to projects that may be developed within the aforesaid (specific) OFW Installation Areas, including details about tender participation and assessment criteria, required guarantees, performance penalties, and other aspects of the tender.

Eligible participants to such competitive bidding process, however, shall be only holders of OFW Exploration Licenses.

The OFW Investor shall enter into a standard (regulated) Sliding Feed-in-Premium Operating Aid Agreement with the RES & GO Operator in Greece (DAPEEP S.A.) in accordance with Law 4414/2016 on the basis of the Reference Price that will derive from the competitive bidding process for the successful OFW Project in a specific OFW Installation Area.

- Step 7: Following the above tender, the OFW Investor shall submit to RAEEY an application for a Special Projects Producer's Certificate pursuant to article 11 of Law 4685/2020 and the relevant Certificates Regulation of December 2020.
- Step 8: The Special Projects Producer's Certificate is issued within three months. It is valid for up to 30 years, and it is renewable for up to the same period. OFW Investors must then proceed with the application for the respective project's Environmental Terms Approval (ETA) within 12 months (extendable by another 24 months in case the project is developed in a Natura 2000 area where a Special Ecological Assessment (SEA) is required in addition to the standard Environmental Impact Assessment (EIA)).
- Step 9: Next step is the granting of a Grid Connection Offer (GCO) within 72 months from the issuance date of the Special Projects Producer's Certificate, respectively, as otherwise the said certificate becomes invalid, as per article 12 of Law 4685/2020.
- Step 10: Following the issuance of the ETA, an OFW Investor must submit to the Independent Power Transmission System Operator (IPTO) a complete application for the granting of a GCO accompanied by an interconnection study of the project with the System and of course the project's ETA. [Step 10]
- Step 11: IPTO shall issue the GCO within two months from the submission of a complete application for the issuance of the GCO. The OFW Investor must accept (or reject) the GCO within two months and (in the affirmative) submit to IPTO the relevant grid connection bond.
- Step 12: Subsequently, the IPTO and the OFW Investor shall enter into a Grid Connection Agreement (GCA) specifying in more detail their respective rights and obligations. The GCO remains in force until the issuance of the Installation License

and the signing of the GCA when the said grid connection bond is to be returned to the OFW Investor (by derogation to the general rule applying to all other renewable energy technologies that such grid bonds are decreased to one fourth their initial amount when the relevant GCA comes into effect).

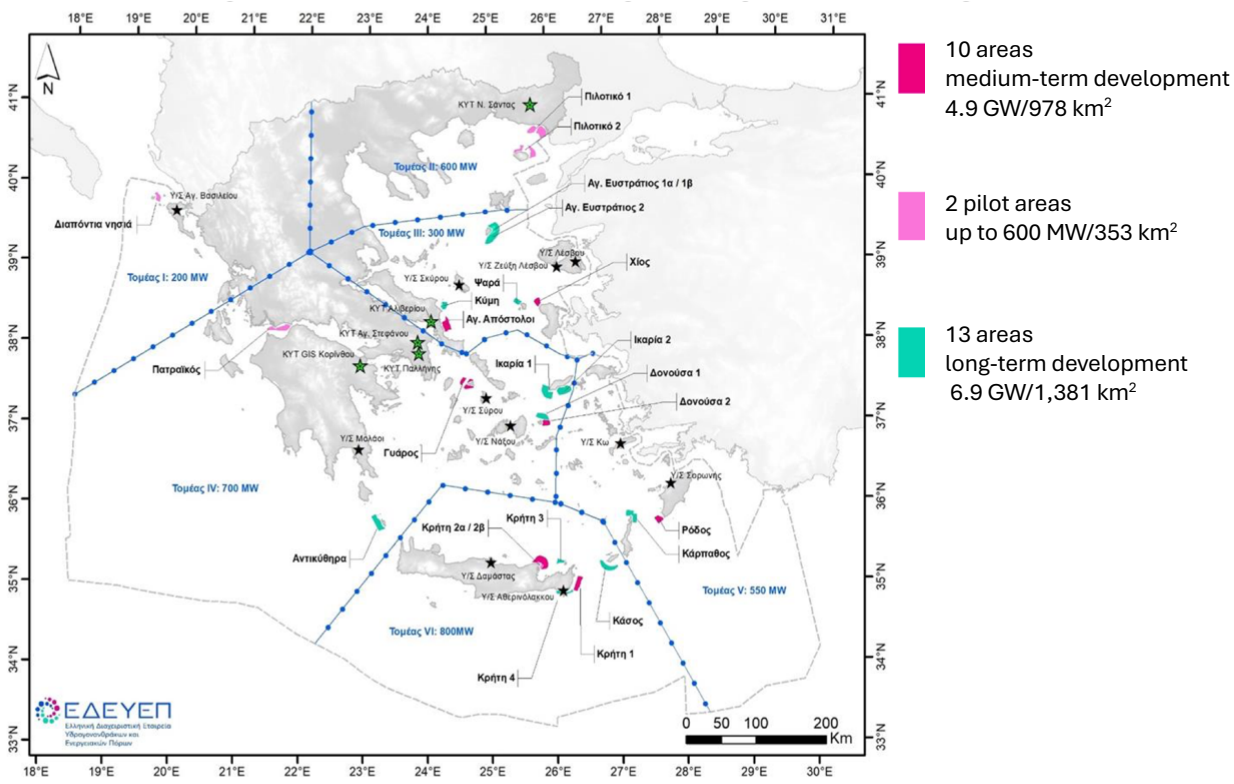

Figure 3: OFW Organized Development Areas

Source: https://energypress.gr/sites/default/files/media/synodeytiko-yliko.pdf

By exception to the above framework, but still largely in the same context, Article 174 of the Law provides for a special pilot program for the development of offshore wind projects up to 600 MW to be developed in the Thracian Sea, as an OFW Organized Development Area. This pilot program solely concerns holders of existing Electricity Production Licenses or Special Projects Producer's Certificates (or pending ones applied for under the previously applicable regime) for offshore wind projects that are located in part or in whole within the aforesaid development area. The license holders are considered as OFW Investors with exclusive development rights in their respective areas while they may be entitled to receive operating aid under a 20-year FiP PPA with a regulated Reference Price outside the scope of the competitive bidding process described herein above. Environmental and other licensing at project level,

including GCO and GCA aspects, will follow the generally applicable legislation, but will extend automatically until the end of the six-year period[128].

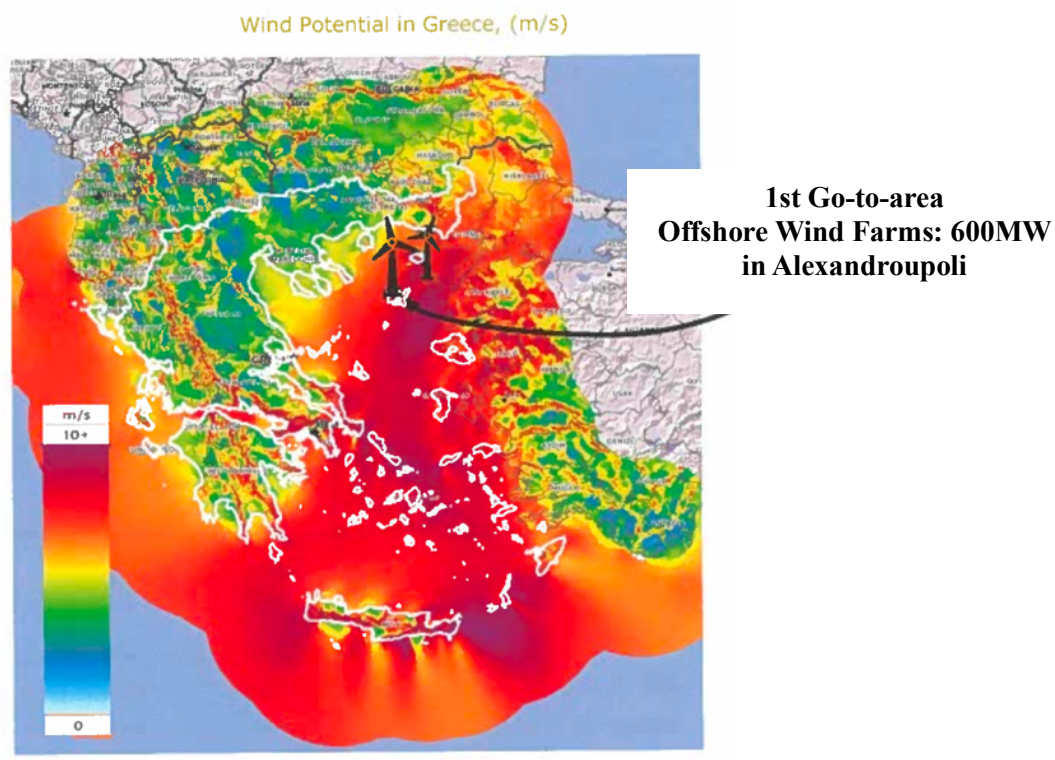

Figure 4: Wind potential & first Go-to-area in Greece
Source: Global Wind Atlas, YPEN, HAEE Analysis

Additionally, recently enacted Law 5106/2024 (Government Gazette 63 A'/01.05.2024) introduces a series of new regulations on a wide spectrum of energy related matters and includes provisions to accelerate the promotion of offshore wind parks. HEREMA shall be able to delegate surveys and measurements necessary for the development of the new offshore wind parks to a special purpose vehicle (SPV), as well as participate in joint venture schemes, and receive funding from financial institutions or participate in projects financed by the Recovery and Resilience Fund.

Overall, it is positive that a framework exists for wind farms. However, some objections must be acknowledged regarding the in-question framework:

1. First, the efficiency of the state has been repeatedly tested and consistently encounters obstacles due to bureaucracy. Therefore, the tasks undertaken by the public sector should be streamlined, consolidating procedures into a single presidential decree and a

[128] Assimakis D., Kitsilis M., Koui G., ReedSmith, Chasing the offshore wind in Greece, 2023, https://www.reedsmith.com/en/perspectives/2023/02/chasing-the-offshore-wind-in-greece

unified strategic environmental assessment, rather than relying on successive ministerial decisions and presidential decrees.

2. Second, the strict observance of the implementation of the timeline remains a considerable challenge. Various regulatory milestones are required for the completion of the regulatory framework, while the need for increased coordination between various state agencies involved in the process shall not be neglected. The timeline needs clarification concerning the issuance of licenses and the terms of the bidding process for pricing.
3. Moreover, there is a risk of delays in pre-allocating the necessary electrical capacity exclusively for offshore wind. Hence, it must be ensured that this pre-allocation occurs promptly and certainly before the issuance of Presidential Decrees.
4. Finally, besides the challenging timeline for the full implementation of the Law vis-à-vis the country's target for the addition of a significant offshore wind capacity by 2030, another issue that has raised concerns is the rather arguable approach taken by the Law as to the late timing of the exclusivity rights granted to an OFW Investor in a specific OFW Installation Area within the framework of the overall process. Apparently, this is an issue that is expected to be addressed to provide adequate comfort to the developers who are called to invest significant amounts during the exploration phase.

Only time will prove the adequacy of the Law, but the proven commitment of the Greek government and HEREMA to implement the Law and achieve the objectives and the targets of the NECP by 2030 and beyond cannot be disregarded. Potential investors' willingness for investments in such a high potentials area for offshore wind like the broader Aegean Sea is a given in view of their current positioning and recent joint ventures between major national and international market players.

8. Conclusion

Energy security and efficiency goals, along with the pursuit of climate change mitigation, are driving the development of green energy technology. Nowadays, more than ever before, the Law of the Sea - one of the most dynamic branches of International Law - is also being confronted with new challenges arising from the effects of climate change[129]. The Law of the Sea must adapt and respond to these challenges in a flexible and practical manner. Given that offshore wind will become one of the most important sources of energy in the coming years, geopolitical balance will be affected. The power of states will be shift from access to fossil fuels to green investments, and states that have invested in offshore wind will be geopolitically upgraded. However, the promotion of these projects must be conducted thoughtfully, considering the potential adverse impacts on ecosystems. The establishment of procedures such as Environmental Impact Assessment, when implemented rationally, constitute necessary prerequisites within legislation for the protection of the environment[130].

International institutions will - and shall - play a crucial role in addressing the current and future challenges of the evolving energy sector by promoting arbitration and investment legal frameworks through policy instruments and agreements that support clean energy industries and electricity production from renewable sources, particularly offshore wind. This broader context of energy transition should be understood and presented as an investment for the future generations. While the private sector can provide support, the responsibility to convey this information and message lies with the international institutions, governance, and political parties. This is crucial because each state has different priorities and economic interests, but also differing capabilities. The role of international institutions is to bridge the global gap and ensure that all states have the capability to transition to a green path.

All the complex issues involved in energy projects explain why energy disputes are at the heart of arbitration. Most energy-related disputes end up in arbitration mechanisms as they involve non-state actors who lack access to international courts. Disputes will arise, and if they are not properly managed, they could undermine the economic viability of a project. Given that there is no “one size fits all” approach in the resolution of disputes in the renewables sector, the best-suited dispute resolution mechanism depends on several factors. Hence, it remains to be seen how dispute resolution procedures such as arbitration will adapt and evolve over time in the renewable sector and especially in the offshore wind energy projects, a relatively young industry with constant challenges and lessons to be learned[131]. The main lesson we can be taught

[129]Rothwell D. and Stephens T., The International Law of the Sea, Third Edition, Hart, 2023 p. viii
[130]Papapetropoulos A., Environmental Impact Assessments in European and Greek Law, Sakkoulas Publications, 2003, p. 57.
[131]Scherer M., International Arbitration in the Energy Sector, Oxford, 2018, p. 106.

from countries like Denmark, Germany and the UK is that there must be a clear and stable strategy and ambitious targets.

Regarding Greece's aeolian ambitions, there is an urgent need to legislate and implement an integrated, coherent, effective regulatory framework for this sector. Additionally, challenges related to technology, infrastructure, logistics, and human resources must be addressed efficiently to ensure rapid growth. Developing floating offshore wind farms in Greece is crucial for the national economy, environment, and local employment. Greece has strong potential. In October 2022, for the first time the country met its energy demand from 100% RES for five consecutive hours. Hence, by investing in the offshore wind development, Greece will strengthen the coherence of the country's general spatial planning, and critically contribute to the acceleration of the green transition. For this, a reliable and secure legislative framework regarding the installation and licensing of floating offshore wind farms must take into consideration issues related to the protection of underwater antiquities, national defense, navigation, and environmental conservation, providing a clear assessment of the project's impacts.

To conclude, this endeavour sought to underscore the pressing need for the development of offshore wind energy. One suggestion to overcome the barriers in the sector - and in the renewable energy market generally - is to adopt an international instrument that establishes a clear and stable legal framework aimed at safeguarding investor interests while promoting corporate social responsibility and sustainable development principles. Offshore wind energy must be seen as a tool to bridge asymmetries and foster state's cooperation in knowledge, technology, and practice. Investing in offshore wind power will be a "game-changer", generating geopolitical benefits, establishing links with other countries through wind energy exports, and thereby contributing to the international security and peace in the seas. At the end, it is a matter of policy, and Law is called upon to create the necessary foundations for this purpose. One is certain; energy transition is a continuous process that impacts everyone, and qui non proficit deficit.

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