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Spanish Yearbook of International Law XVII (2011–2012): 23–42

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The Environmental Protection Regimes Governing Maritime Renewable Energies in the EU and Their Implementation in the Marine and Coastal Areas of the South of Spain

Víctor L. Gutiérrez Castillo & Juan J. García Blesa
Víctor L. Gutiérrez Castillo is Professor in Public International Law and International Relations, Universidad de Jaén. Juan J. García Blesa is Lecturer in International Law and International Relations, Saint Louis University in Spain and Universidad Internacional de Andalucía/Université Abdelmalek Essaadi.

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ABSTRACT

The purpose of this paper is to review the configuration and point out the weaknesses of the main legal regimes of environmental protection of the Mediterranean Sea applicable to the implementation of marine renewable energies in the maritime and coastal areas of the EU, focusing on some parts of the south coast of Spain. Renewable energy sources have become a strategic industry for Europe over the last years due, among other things, to the need for finding cheap and clean energy sources. Within this context, marine renewable energies attract a lot of attention from the EU and several Member States. However, the development of this industry without a sound environmental protection and preservation policy and regulation, might well result in a rather negative impact on the affected marine ecosystems. On the other hand, the legal framework established by the EU and other international legal regimes for the protection of the marine environment seems to give much room for Member States putting economic objectives before environmental considerations.

DOI: 10.1163/9789004264755_003

Keywords

Environmental protection; renewable energy sources; marine ecosystems; Mediterranean Sea; coastal areas south Spain.

RÉSUMÉ

Le but de cet article est de revoir la configuration et de souligner les faiblesses des principaux régimes juridiques de protection de l'environnement de la mer Méditerranée applicables à la mise en œuvre des énergies renouvelables marines dans les zones maritimes et côtières de l'UE, en se concentrant sur certaines parties du la côte sud de l'Espagne. Sources d'énergie renouvelables sont devenus une industrie stratégique pour l'Europe au cours des dernières années en raison, entre autres, à la nécessité de trouver des sources d'énergie bon marché et propre. Dans ce contexte, les énergies marines renouvelables attirent beaucoup d'attention de la part de l'Union européenne et plusieurs États membres. Cependant, le développement de cette industrie sans une bonne protection de l'environnement et de la politique de préservation et de régulation, pourrait bien se traduire par un impact plutôt négatif sur les écosystèmes marins concernés. D'autre part, le cadre juridique mis en place par l'UE et d'autres régimes juridiques internationaux pour la protection de l'environnement marin semble donner beaucoup de place pour les États membres de mettre des objectifs économiques avant les considérations environnementales.

Mots clés

Protection de l'environnement; énergies renouvelables; écosystèmes marins; mer Méditerranée; côte sud de l'Espagne.

RESUMEN

El propósito de este trabajo es revisar la configuración y señalar las principales debilidades de los regímenes jurídicos de protección del medio ambiente del mar Mediterráneo aplicables a la ejecución de las energías renovables marinas en las zonas marítimas y costeras de la UE, centrándose en la costa sur de España. Las fuentes renovables de energía se han convertido en una industria estratégica para Europa en los últimos años debido, entre otras razones, a la necesidad de encontrar fuentes de energía barata y limpia. Dentro de este contexto, las energías renovables marinas atraen la atención de la Unión Europea y varios Estados miembros. Sin embargo, el desarrollo de esta industria, sin una buena protección del medio ambiente y la política de conservación y regulación, podría tener un impacto negativo sobre los ecosistemas marinos del lugar. Por otro lado, el marco legal, establecido por la UE y otros regímenes jurídicos internacionales para la protección del medio marino parece dar margen de maniobra a los Estados miembros para anteponer los objetivos económicos a las consideraciones ambientales.

Palabras clave

Protección de medio ambiente; energías renovables; ecosistemas marinos; mar Mediterráneo; costa sur de España.

I. INTRODUCTION: MARINE RENEWABLE ENERGIES IN THE MARITIME AND COASTAL AREAS OF THE EU

Climate change due to the additional global warming of the atmosphere caused by human activities that generate high concentrations of greenhouse gases (GHG) has become a "common concern of humankind"[1] over the last 20 years, and thus a critical point in the global governance agenda. The signing of the United Nations Framework Convention on Climate Change (UNFCCC) in May 1992 sets the overall objective of stabilizing GHG emissions as a goal of the international community in order to protect the global climate system.[2]

As the UNFCCC states, the stabilization of GHG emissions directly affects the energy production sector, such that the Parties agree to "Promote and cooperate in the development, application and diffusion, including transfer, of technologies, practices and processes that control, reduce or prevent anthropogenic emissions of greenhouse gases [...]".[3] This general agreement, together with the global aspiration to achieve a sustainable economic and production system and the subsequent agreements concluded within this framework,[4] imply among other measures the replacement of energy sources which release large amounts of GHG by other less polluting sources.[5] As a consequence,

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[1] See Preamble of United Nations Framework Convention on Climate Change (UNFCCC), done at New York on 9 May 1992 (A/AC.237/18 (Part II)/Add.1 and Corr.1), and entered into force on 21 March 1994, retrieved from http://unfccc.int/resource/docs/convkp/conveng.pdf.

[2] See Article 3 of the UNFCCC; see also the Kyoto Protocol, signed on 11 December 1997 and entered into force on 16 February 2005, retrieved from http://unfccc.int/kyoto_protocol/items/2830.php; and the Copenhagen Accord of 18 December 2009, retrieved from http://unfccc.int/meetings/copenhagen_dec_2009/items/5262.php.

[3] See article 4.1.c) of the UNFCCC.

[4] Article 3.3 y 4 Ibid.; see also SABOGAL AGUILAR, J., HURTADO AGUIRRE, E., MORENO CASTILLO, E., "Evaluación de los proyectos de mecanismo de desarrollo limpio presentados a la UNFCCC. Los criterios de sostenibilidad entre 2004 y 2008", *Revista Facultad de Ciencias Económicas: Investigación y Reflexión*, Vol. 18 (1), 2010, pp. 225–246; ARVIND JASROTIA, "Justice at Cancun: Twilight or Dawn?", *Dilemata*, 6, 2011, pp. 31–37; TABAU, A.-S., MALJEAN-DUBOIS, S., Non-compliance Mechanisms: Interaction between the Kyoto Protocol System and the European Union, *European Journal of International Law*, Vol. 21 (3), 2010, pp. 749–763; LÁNCOS, P.L., Flexibility and Legitimacy – The Emissions Trading System under the Kyoto Protocol, *German Law Journal*, Vol. 9 (11), 2008, pp. 1625–1651; FREESTONE, D. and STRECK, Ch., *Legal Aspects of Implementing the Kyoto Protocol Mechanisms: Making Kyoto Work*, Oxford University Press, London, 2005; HILEMAN, B., "Meeting Kyoto Protocol Goals", *Chemical and engineering news*, Vol. 83 (2), 2005, p. 11; SASSNICK, Y., HAMMONS, T., SCHWARZ, J., "Recent Developments of Transmission System Interconnections and the Implementation of Power Generation with Respect to the Kyoto Protocol", *Electric power components and systems*, Vol. 34 (8), 2006, pp. 841–856.

[5] Article 4.2.10 of the UNFCCC.

renewable energy sources (RES) currently deserve more attention from some key international actors, especially from the European Union (EU) and some of its Member States.[6]

The EU, following its Sixth Environment Action Programme[7] and according to its commitment to take international leadership and initiative under the UNFCCC[8] has decided to focus on fostering and developing renewable energies as a common core action within both its energy and environmental policies.[9] Although the EU has shown interest in RES for decades, its support has only gathered momentum after 2007.[10] Following the strategic proposals of the European Commission (EC) for the establishment of a European energy policy and a long term strategy on renewable energies,[11] the Council of the European Union adopted an ambitious Action Plan that included the general target of increasing the share of renewable energies in its overall energy mix to 20% by 2020 and the resulting need for substantially strengthening research and investment in that area.[12]

These objectives and their subsequent development by concrete actions gave a boost to the development, investment and access to the energy market of renewable

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6 See generally OBERTHÜR, S., "The European Union's Performance in the International Climate Change Regime", *Journal of European Integration*, Vol. 33(6), 2011, pp. 667–682; and UNFCCC background information about the EU as a decisive actor in this field on http://unfccc.int/essential_background/feeling_the_heat/items/2908.php.

7 See Communication from the Commission to the Council, the European Parliament, the Economic and Social Committee and the Committee of the Regions on the Sixth Environment Action Programme of the European Community, "Environment 2010: Our future, Our choice", COM(2001)31 final – Not published in the Official Journal.

8 Article 3. 1 UNFCCC. The EC ratified the UNFCCC by Council Decision 94/69/CE, 15 December 1993. About the international role of the EU in the fight against climate change, see FERNÁNDEZ EGEA, R.M., SINDICO, F., "El papel de la UE en la lucha contra el cambio climático: ¿líder en la política climática global?", *Revista Electrónica de Estudios Internacionales*, nº. 14, 2007, p. 1 et seq.

9 See articles 191 and 194 of the Treaty on the Functioning of the European Union.

10 See Council Recommendation 88/349/EEC of 9 June 1988 on developing the exploitation of renewable energy sources in the Community (*Official Journal* L 160, 28/06/1988 P. 0046–0048); Communication from the Commission – Energy for the future: renewable sources of energy – White Paper for a Community strategy and action plan, COM (1997) 0599 final; or the Directive 2001/77/EC of the European Parliament and of the Council of 27 September 2001 on the promotion of electricity produced from renewable energy sources in the internal electricity market.

11 These proposals deem the development and implementation of RES to be an opportunity to successfully and simultaneously face the challenges of economic growth, security of supply and climate change. See Green Paper – A European Strategy for Sustainable, Competitive and Secure Energy, COM (2006) 105 final; Communication from the Commission to the Council and the European Parliament – Renewable energy road map – Renewable energies in the 21st century: building a more sustainable future, COM (2006) 0848 final; and Communication from the Commission to the European Council and the European Parliament – an energy policy for Europe, COM (2007) 0001 final.

12 Brussels European Council, 8/9 March 2007, annex to the Presidency Conclusions; this target responds to the objective of reducing EU greenhouse gas emissions by at least 20% from 1990 levels by 2020 (ibid., par. 32).

energies, including those technologies meant to be installed in maritime areas. For instance, the first version of a European Strategic Energy Technology Plan (SET-PLAN), put forward by the European Commission (EC), already stated the need for doubling the power generation capacity of the largest wind turbines, with off-shore wind as the lead application, as a key EU technology challenge that should attract European investment and research.[13]

The support of the EU for RES did considerably increase during 2008–2009. Indeed, the EC calls for establishing legally binding national targets and intensifying efforts towards development and implementation of RES were echoed by the Council of the EU, who adopted, *inter alia*, the Directive of 23 April 2009 on the promotion of the use of energy from renewable sources,[14] as well as a set of other legal and political measures aimed at implementing renewable energy, especially including marine renewable energy sources (MRES).[15]

Yet, apart from the EU legal and political measures for the promotion of RES, the international legal context relevant to the development and implementation of marine renewable energies remains complex,[16] even more so in certain areas such as the

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[13] For that purpose, the European Commission proposes to launch a European Wind Industrial Initiative, including on and off-shore applications, see Communication from the Commission to the Council, the European Parliament, the European Economic and Social Committee and the Committee of the Regions – A European strategic energy technology plan (SET-PLAN) – 'Towards a low carbon future', COM (2007)0723 final, pp. 5 and 10; endorsed by the Brussels European Council, 13/14 March 2008, Conclusions of the Presidency, par. 20–28; see also Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions – Offshore Wind Energy: Action needed to deliver on the Energy Policy Objectives for 2020 and beyond, COM (2008) 0768 final/2.

[14] 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, *OJ* L 140, 5.6.2009, pp. 16–62; after the implementation of the emissions allowances market in compliance with the requirements of the Kyoto Protocol, the EU passes the directive 2009/28, which sets renewable energy consumption objectives for each member state, grants European legal effect to national green certificates (a tradable commodity certifying that electricity has been generated from RES), establishes a European renewable energy market, and standardizes the guarantees of origin, in order to allow the future creation of a European market of guarantees of origin. For further information, see SANZ RUBIALES, I., "Mercados de cuotas y protección del medio ambiente: el fomento de las energías renovables en la Directiva 2009/28", *Revista General de Derecho Administrativo*, nº. 25, 2010.

[15] See, e.g., Directive 2008/56/EC of the European Parliament and of the Council of 17 June 2008 establishing a framework for community action in the field of marine environmental policy (Marine Strategy Framework Directive), *OJ L* 164, 25.6.2008, pp. 19–40.

[16] See *Conclusions to the Symposium on Marine Renewable Energies*, Santander, 16 April 2010, p. 4, available at www.crpm.org/pub/agenda/1398_actas_santander_2010.pdf; there are still important legal barriers to the implementation of marine renewable energy sources. This is the case of problems relating to the delimitation of areas of implementation, due to the fact that these areas are directly regulated by the international law of the sea and the international regimes for marine and coastal environment protection. This problem increases the complexity of the national regulations and legal procedures that slow down and cripple the implementation of MRES, see also the communication of the European Commission of 13 November 2008, COM

Mediterranean Sea. The applicable international legal framework encompasses from issues related to the law of the sea to different international marine and coastal environment protection regimes, including the EU regulation in this field. Notwithstanding the above mentioned legal barriers, it seems that MRES are meant to experience a considerable development in the next future in the EU.

Generally, marine renewable energy sources mostly consist of capturing the kinetic energy of sea wind, waves, marine currents and tides by means of different versions of turbine based mechanical devices. However, as of today, the most successful developments in this area, in terms of technological viability and profitability, belong to the sea wind sector and to a much more limited extent to tidal energy. In fact, today sea wind farms are based on an adaptation of on-shore windmills to shallow waters (5–18 meters depth) to be deployed not further than 14 km. off-shore. On the other hand, only few tidal power plants are currently functioning and their output is still considerably low compared to sea wind farms.[17]

Nevertheless, given that sea water density is 850 times higher than air, there is much more energy available in the ocean current, wave and tidal energy sectors and, therefore, further developments are foreseeable.[18] In fact, new models of wave, current and tidal energy devices have been successfully tested over the last few years and some of them are in an industrial deployment stage. The improvement of floating foundations and anchor systems make possible an ever deeper and further offshore installation (about 900 meters depth and 130 km. offshore). Similarly, the same developments favor the sea wind energy sector and grant sea windmills access to areas further offshore, where sea wind energy potential rises considerably.[19]

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(2008) 768 final; and ANKER, H.T., OLSEN, B.E. and RØNNE, A. (eds.), *Legal systems and wind energy: a comparative perspective*, *Energy and environmental law & policy series*, vol. 2, Alphen aan den Rijn: Kluwer Law International, 2009.

17 See *Energy and environment report 2008*, Report n.º 6/2008, European Environment Agency, Copenhagen, 2008; "Renewable U.K. Wave and Tidal 2010 Conference", *Renewable Energy Focus*, March/April 2010, pp. 6 and 8; "Renewable Energy in Scotland", *Renewable Energy Focus*, May/June 2010, pp. 28–33; MUSIAL, W., BUTTERFIELD, S. and RAM, B., *Energy from Offshore Wind*, National Renewable Energy Laboratory, U.S. Department of Energy, Conference Paper, February 2006; Strangford Lough Tidal Turbine, Northern Ireland, United Kingdom, en www.power-technology.com; "L'énergie marémotrice" en www.planete-energies.com.

18 The highest wave energy potential available (50–100 kW per meter of wave thrust) seems to be concentrated in the Atlantic and Pacific oceans, between latitudes 40º and 60º. In tropical areas the potential is about 10–20 kW/m. For further information, see PERERA MARRERO, J., ARANCIBIA MORENO, G., MELÓN RODRÍGUEZ, E., GARCÍA GARCÍA, F., "Uso de la energía proveniente del oelaje atlántico", *Revista del Instituto de Navegación de España*: publicación técnica cuatrimestral de navegación marítima, aérea, espacial y terrestre, nº. 35, 2009, pp. 4–15.

19 See *Conclusions to the Symposium on Marine Renewable Energies,* Santander, 16 April 2010, p. 4; Santoña Wave Energy Project (SWEP), www.iberdrola.es; Wave Hub, Hayle, U.K., www.southwestrda.org.uk/working_for_the_region/key_sw_projects/cornwall__the_isles_of_scilly/wave_hub.aspx; "PELAMIS, World's First Commercial Wave Energy Project, Agucadoura, Portugal", en www.power-technology.com/projects/pelamis; Whale Tale Turbine Project, www.whaletailturbine.com/?gclid=CMbWpcWe7aICFYiX2Aod727h9Q; *Transverse Horizontal Axis*

Finally, the most interesting aspect of MRES with regard to this paper and one of the main reasons why its promotion has been labeled as preferential is its apparent lack of environmental impact, since they seem not to create any type of pollution. However, the fact is that this industrial activity generally implies some sort of negative effect in the form of electromagnetic fields, vibrations, acoustic pollution, water turbidity and higher risk of eutrophication, and alteration of the seabed, benthic life, and routes of migratory animals.[20] Thus, the main danger posed by MRES appears to be the alteration and disturbance of marine ecosystems and migratory species that generate MRES, especially ocean current turbines and sea windmills. In fact, many potential negative effects of MRES on the environment will not be conclusively established until enough time has passed in order to measure its long-term impact. However, it can already be said that insofar as the exploitation of sea wind and water currents demands the construction of physical barriers in the form of turbines, wires, etc., the animals that live and travel through these currents will be in danger.[21]

To sum up the preceding observations, the fast development of this strategic industry, together with the current political and economic context described above, make a quantitative and qualitative increase of MRES' impact in European marine areas very likely. Therefore, it is the main purpose of this article to review the configuration and point out the weaknesses of the main legal regimes applicable to the environmental protection of the Mediterranean Sea, focusing on some parts of the south coast of Spain. The concern about this region is well justified by the latest interest of the Spanish Administration at all levels in giving a significant boost to the development and implementation of RES, also in marine and coastal areas, for the sake of complex political and economic interests.[22]

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Water Turbine (THAWT), en www-civil.eng.ox.ac.uk/research/tidal/index.html; "Offshore Wind – Do We Have What It Takes?", *Renewable Energy Focus,* January/February 2010, pp. 24–29; "Maximising the Power of Waves", *Renewable Energy Focus*, November/December 2009, pp. 80–84; "Wave Energy Device Oyster Launched", *Renewable Energy Focus*, November/December 2009, p. 14; "Are We Ready to Transform UK Waters?", *Renewable Energy Focus*, May/June 2010, pp. 12–17; "Seven Offshore Foundation Design Shortlisted", *Renewable Energy Focus*, November/December 2009, p. 13; "Seven Estuary Tidal Power Projects Shortlisted", *Renewable Energy Focus*, March/April 2009, p. 18.

20 For an analysis of potential negative effects on marine and coastal ecosystems in Spanish maritime and coastal areas, see Strategic Environmental Assessment of the Spanish Coast for the Installation of *Estudio Estratégico Ambiental del Litoral Español para la instalación de renovables marinas*, pp. 47 et seq., retrieved from: www.mityc.es/energia/electricidad/RegimenEspecial/eolicas_marinas/Paginas/estudioEstrategico.aspx; an abundant bibliography on the topic might be found at the website of the Marine Bioacoustics Lab, University of Aarhus, Denmark, www.marinebioacoustics.com/pub.html.

21 EXO, K.-M., HUEPPOP, O. and GARTHE, S., *Birds and offshore wind farms: a hot topic in marine ecology*. Wader Study Group Bull, 2003.

22 FERNÁNDEZ GARCÍA, Ricardo, *La dimensión económica del desarrollo sostenible*, Ed. Club Universitario, San Vicente (Alicante), 2011, p. 108; MOLINAS, C., "Una teoría de la clase política española", El País, 09/09/2012; CALZADA ALVAREZ, G. et al., "Study of the effects on employment of public aid to renewable energy sources", *Procesos de Mercado*, Vol. 7(1), 2010; "La 'burbuja fotovoltaica' supera los 15.000 millones", *Capital Madrid*, 04/07/2012; "Galán augura una burbuja

II. THE MARINE ENVIRONMENT PROTECTION REGIMES APPLICABLE TO THE MARITIME AND COASTAL AREAS OF THE EU: THE MEDITERRANEAN SEA

In order to guarantee that the development of the industry is carried out having consideration for ecosystems and migratory species, it is necessary to make sure that not only the industry complies with the relevant national and international legal framework, but also that this framework implies an adequate level of protection.

The main question, therefore, is: *what is the international legal framework governing marine and coastal environment protection in the maritime areas of the EU, especially the Mediterranean Sea?* In the first place, a distinction needs to be made between international treaties which apply to maritime and coastal areas of the EU on the one hand and on the other hand EU law. At the international level, the most relevant regimes that affect the EU are the Helsinki,[23] OSPAR[24] and Barcelona[25] Conventions, being the Barcelona Convention the international regime applicable to the Mediterranean Sea. With regard to these conventions, it should be noted from the outset that they seem to be concerned about a type of pollution that at first sight appears to have little to do with the above mentioned negative effects of MRES. However, insofar as MRES may generate several types of pollution which could even imply a modification of habitats and ecosystems, including risks for the life of some species, it is necessary to explore the most important regulatory elements of those Conventions which constitute the general normative framework in this field before analyzing the relevant EU legal regime. In any case, it must be stressed that none of the regimes examined seems to reflect a specific concern about the potential hazardous effects of MRES on marine ecosystems.[26]

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termosolar si no se gestionan bien las renovables", *Cinco Días*, 22/07/2010; "El Gobierno decide poner coto a la burbuja energética", *La Vanguardia*, 21/03/2010.

[23] Convention on the Protection of the Marine Environment of the Baltic Sea Area (Helsinki Convention and its governing body – the Helsinki Commission, HELCOM), for further information about the Convention and the activities of the Commission, see www.helcom.fi.

[24] Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR Convention and its governing body – the OSPAR Commission), for further information about the Convention and the activities of the Commission, see www.ospar.org.

[25] Convention for the protection of the Mediterranean Sea against pollution, adopted in Barcelona on 16 February 1976 and amended and renamed the Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean on 10 June 1995, see the Barcelona Convention and all its Protocols, available at the website of the Mediterranean Action Plan for the Barcelona Convention of the United Nations Environment Programme, http://www.unepmap.org.

[26] See *Peer Review of the Draft Quality Status Report* 2010, at www.ospar.org; It should be taken into account that there are other international legal regimes the scope of which goes beyond European waters that apply to the implementation of MRES in EU marine areas. For instance, the Convention on Migratory Species (the Bonn Convention), which regulates the conservation of wild life and its habitats at the global level, see the Convention and activities of the Secretariat at www.cms.int; the Convention on Biological Diversity, which pursues the conservation of the biological diversity, including ecosystems and their sustainable, see the Convention and activities of the Secretariat at www.cbd.int; or the UNESCO Convention Concerning the

The ability of the Conventions to regulate the development of MRES depends on their particular scope and the human activities they attempt to regulate. The OSPAR and Helsinki Conventions define in a very similar way their concept of marine pollution as "the introduction by man, directly or indirectly, of substances or energy into the maritime area which results, or is likely to result, in hazards to human health, harm to living resources and *marine ecosystems*, damage to amenities or interference with other legitimate uses of the sea".[27] Thus, the OSPAR and Helsinki Conventions are based on the 'ecosystem-based approach'.[28] This approach was first defined by the Convention on Biological Biodiversity in 2000[29] and adopted at the Joint Ministerial Meeting of 25–26 June 2003 held in Bremen by the Contracting Parties to the OSPAR and Helsinki Conventions. The ecosystem-based approach is a holistic concept based on an understanding of the ecosystem as a dynamic complex of plant, animal and micro-organism communities and their non-living environment interacting as a functional unit at different geographic levels. This approach acknowledges that current knowledge about the effects of human interactions with marine ecosystems is still limited and, therefore, calls for an integrated management of human activities based on the best available scientific knowledge in order to identify and prevent the negative impact of such activities on the good environmental status of the ecosystem and its sustainable use.[30]

Therefore, the OSPAR and Helsinki Convention regimes will apply to MRES as far as such *activities* interfere with the ecosystem approach or other legitimate uses of the affected areas.[31] With regard to the obligations binding the Contracting Parties, there is a core of general obligations in the OSPAR and Helsinki Conventions that relate to the adoption of "all necessary measures" as to *prevent and remove* any marine pollution. Finally, the OSPAR and Helsinki Conventions provide for stringent obligations concerning conservation and restoration of damaged ecosystems, as well as the application of the precautionary principle, the polluter-pays principle and the use of best

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Protection of the World Cultural and Natural Heritage (the World Heritage Convention), which defines the concept of "natural heritage" that affects specific ecosystems and habitats such as monuments and natural sites protected for their esthetic value, see the Convention and activities of the Secretariat at www.whc.unesco.org. These and other similar regimes are also an integral part of the legal framework that should limit and control the development of the MRES industry protecting the marine and coastal environment.

27 Article 2.1 of the Helsinki Convention; and Article 1(d) of the OSPAR Convention (emphasis added).

28 Articles 1. 2), 3) and 3.5).

29 See RODRIGUEZ, J. and RUIZ, J., "Conservación y protección de ecosistemas marinos: conceptos, herramientas y ejemplos de actuaciones", *Ecosistemas: Revista científica y técnica de ecología y medioambiente*, Vol. 19(2), 2010; and SMITH, R.D. and MALTBY, E., *Using the Ecosystem Approach to Implement the Convention on Biological Diversity: Key Issues and Case Studies*, International Union for Conservation of Nature and Natural Resources, Gland, Switzerland and Cambridge, United Kingdom, 2003, available on: www.iucn.org/bookstore.

30 See Statement on the Ecosystem Approach to the Management of Human Activities, "Towards an Ecosystem Approach to the Management of Human Activities".

31 See also Annex V to OSPAR Convention on the Protection and Conservation of the Ecosystems and Biological Diversity of the Maritime Area, available at www.ospar.org/html_documents/ospar/html/ospar_convention_e_updated_text_2007_annex_v.pdf.

available techniques and best environmental practice, including, where appropriate, clean technology.[32]

As for the Barcelona Convention, in spite of establishing a similar definition, it results in a rather anthropocentric regime less protective towards the environment as it does not refer to hazards to ecosystems as an element to its definition of "pollution". Instead, it only includes those substances or energy which results or is likely to result "in such deleterious effects as harm to living resources and marine life, hazards to human health, hindrance to marine activities, including fishing and other legitimate uses of the sea, impairment of quality for use of seawater and reduction of amenities".[33] Neither shall its Protocol for the Protection of the Mediterranean Sea against Pollution Resulting from Exploration and Exploitation of the Continental Shelf and the Seabed and its Subsoil be applicable to MRES, since it only envisages the exploration and exploitation of mineral resources (ore, gas, oil, etc.).[34] Only the Protocols concerning Integrated Coastal Zone Management (ICZM) and Specially Protected Areas and Biological Diversity in the Mediterranean provide for a strong regulatory basis insofar as the deployment of MRES takes place within one of the Specially Protected Areas or affects protected species or is managed in an integrated coastal zone.[35]

With regard to the Mediterranean Sea, the Contracting Parties to the Barcelona Convention will individually or jointly take all appropriate measures to protect and improve the Mediterranean marine environment in order to contribute to sustainable development. In order to meet this objective, the Parties undertake to reduce, combat and, as far as possible, eliminate pollution in this area. The main goals of the Convention are: the assessment and control of pollution; the sustainable management of natural marine and coastal resources; the integration of the environment into economic and social development; the protection of the marine environment and coastal regions through action aimed at preventing and reducing pollution and, as far as possible, eliminating it, whether it is due to activities on land or at sea; and the protection of natural and cultural heritage. In addition, the Barcelona Convention includes the application of the precautionary principle and the polluter-pays principle; the promotion of impact assessments; the protection and preservation of biological diversity; and access to information and public participation.[36]

The lack of an ecosystem-based approach in the regional legal regime governing the Mediterranean Sea appeared to be a significant weakness which may have substantially hindered the ability of this regime to effectively prevent and remove the potential negative effects of the development of MRES in this area. This problem was solved by the Contracting Parties to the Barcelona Convention in January 2008 at their

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32 Article 2 of the OSPAR Convention and Article 3 of the Helsinki Convention.

33 Article 2 (a).

34 Article 1 (c) y (d).

35 See all Protocols to the Barcelona Convention, available at http://www.unepmap.org/index.php?module=content2&catid=001001001; for the Alboran Sea and the Bay of Cadiz, see RODRIGUEZ, J. and RUIZ, J., "Conservación y protección de ecosistemas marinos: conceptos, herramientas y ejemplos de actuaciones", *Ecosistemas: Revista científica y técnica de ecología y medioambiente*, Vol. 19(2), 2010, pp. 11–20.

36 Articles 3 and 4.

Almeria meeting, where they decided to "progressively apply the ecosystem approach to the management of human activities that may affect the Mediterranean marine and coastal environment".[37] However, the introduction of this approach requires a very close cooperation between the Contracting Parties that does not seem to be taking place in a sufficient degree yet. As a result, only three out of the seven strategic goals identified in the road map for the application of the ecosystem approach in the Mediterranean Sea, which should have been implemented until July 2012, have been completed.[38]

Nevertheless, as mentioned above, two of the Protocols to the Barcelona Convention, the Protocol on ICZM and the Protocol on Specially Protected Areas and Biological Diversity in the Mediterranean, could offer a sound basis for a comprehensive Mediterranean framework that could guarantee a sufficient environmental protection. However, the Protocol on Specially Protected Areas and Biodiversity, which is specially well-suited for the achievement of a well-balanced regional use of marine and coastal areas governed and guaranteed by international law, subsequently depends on the establishment by the coastal states of multilateral Specially Protected Areas of Mediterranean Importance (SPAMIs).[39] No SPAMI has been established yet in the Mediterranean area between Spain and Morocco, i.e. the Alboran Sea.[40]

On the other hand, the Protocol on ICZM,[41] which explicitly includes the ecosystem approach among its regulatory principles,[42] does not affect the deployment of MRES far beyond the seashore as its maximum geographical scope of application is the territorial sea (max. 12 nautical miles).[43] Still, it can serve as a sound framework for

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37 Decision IG 17/6: Implementation of the ecosystem approach to the management of human activities that may affect the Mediterranean marine and coastal environment, UNEP(DEPI)/MED IG.17/10 Annex V, pp. 179–180.

38 Ibid., pp. 205–206; about the application of the ecosystem approach and the Barcelona Convention, see the Regional Activity Center for Specially Protected Areas, http://www.rac-spa.org/ecap.

39 See Articles 4–10 of the Specially Protected Areas and Biodiversity Protocol.

40 Note that as mentioned below various national Specially Protected Areas (SPAs) have been established under domestic law by Spain and Morocco. See RODRIGUEZ, J. and RUIZ, J., op. cit., pp. 11–20.

41 JUSTE-RUIZ, J., BOU, V., "Towards integrated management of the coasts and of the coastal waters in Spain", in: Nicola Greco (ed.), *Le risorse del mare e delle coste: ordinamento, amministrazione e gestione integrata*, Roma (Italia), Ed. Edistudio, 2010, pp. 119–154.

42 See Article 3(2) (b) of the ICZM Protocol.

43 See ibid., article 2 (e) "'Coastal zone' means the geomorphologic area either side of the seashore in which the interaction between the marine and land parts occurs in the form of complex ecological and resource systems made up of biotic and abiotic components coexisting and interacting with human communities and relevant socio-economic activities". (f) "'Integrated coastal zone management' means a dynamic process for the sustainable management and use of coastal zones, taking into account at the same time the fragility of coastal ecosystems and landscapes, the diversity of activities and uses, their interactions, the maritime orientation of certain activities and uses and their impact on both the marine and land parts"; and article 3 (1). "The area to which the Protocol applies shall be the Mediterranean Sea area as defined in Article 1 of the Convention. The area is also defined by: (a) the seaward limit of the coastal zone, which shall be the external limit of the territorial sea of Parties; and (b) the landward limit of the coastal zone, which shall be the limit of the competent coastal units as defined by the Parties".

safeguarding at least the south Spanish coastal environment against irrational developments of MRES. The ICZM seeks a sustainable development of coastal zones by rational planning of activities, the preservation of coastal zones, the sustainable use of natural resources, the preservation of ecosystems and coastlines, the prevention and reduction of natural disasters and climate change, and the achievement of coherence between public and private initiatives and between all decisions by the public authorities, at the national, regional and local levels, which affect the use of the coastal zone.[44] With special regard to energy facilities and maritime works and structures, it establishes that such facilities, structures and works will have to be subject to authorization "so that their negative impact on coastal ecosystems, landscapes and geomorphology is minimized or, where appropriate, compensated by non-financial measures."[45] The ICZM Protocol also recognizes "the specific aesthetic, natural and cultural value of coastal landscapes, *irrespective of their classification as protected areas*" and binds the Contracting Parties to adopt "measures to ensure the protection of coastal landscapes through legislation, planning and management" and to "promote regional and international cooperation in the field of landscape protection, and in particular, the implementation, where appropriate, of joint actions for transboundary coastal landscapes".[46]

Specially since the EU Council decision of 4 December 2008 on the signing, on behalf of the European Union, of the ICZM Protocol to the Barcelona Convention[47] and the resulting applicability of the infringement procedures of the EC to the Member States and the jurisdiction of the European Court of Justice, the ICZM Protocol has become a significant protection regime to be taken into account in the development of MRES in the Mediterranean Sea areas of the EU. Notwithstanding this regulatory improvement, the fact that the ICZM Protocol, entered into force on 24 March 2011, is still in an early stage of implementation,[48] together with its limited geographical scope of application (the maximum width of the territorial sea) and merely advisory non-adversarial compliance mechanisms,[49] imply that ICZM will only be applicable to the present state of development of MRES (usually not to be deployed beyond 14 km offshore) but not for the future developments examined above. Therefore, it becomes necessary to explore the strengthened EU legal regime.

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44 See article 5 of the ICZM Protocol. For principles and procedures for the implementation of ICZM, see articles 6 and 7.

45 Article 9.2 (f).

46 Article 11, emphasis added.

47 Decision 2009/89/EC, Official Journal of the EU, L 34/17, 04.02.2009.

48 See the Action Plan for the Implementation of the ICZM Protocol, for the period 2012–2019, adopted at the 17th Ordinary Meeting of the Contracting Parties, Decision IG 20/2, UNEP(DEPI)/MED IG 20/8, Annex II; and the Paris Declaration, UNEP(DEPI)/MED IG.20/CRP.XX, Annex I; see also the follow-up of the ICZM implementation process on the web site of the EU funded Pegaso Project, retrieved 15.08.2012 from http://www.pegasoproject.eu.

49 See Decision IG.17/2 on Compliance Procedures and Mechanisms adopted by the 15th Meeting of the Contracting Parties, after which a Compliance Committee was created in July 2008; and Decision IG.19/1 containing the Rules of Procedure adopted by the 16th Meeting of the Contracting Parties in November 2009.

The EU has passed a set of legal measures aimed at the protection and conservation of the marine and coastal environment of the EU, which directly affects the industrial development of MRES.[50] One of the most relevant of such EU measures is the Directive 2008/56/EC of the European Parliament and of the Council of 17 June 2008 establishing a framework for community action in the field of marine environmental policy (Marine Strategy Framework Directive).[51] This Directive establishes common binding objectives for the protection and conservation of the marine environment, which are implemented by specific marine strategies and programmes of measures devised and put into practice by each Member State. The main objective pursued by the Directive is to lay down a common framework within which the particular strategies and measures from Member States will aim to achieve until 2020 a 'good environmental status',[52] defined as:

> the environmental status of marine waters where these provide ecologically diverse and dynamic oceans and seas which are clean, healthy and productive within their intrinsic conditions, and the use of the marine environment is at a level that is sustainable, thus safeguarding the potential for uses and activities by current and future generations, i.e.:
>
> (a) the structure, functions and processes of the constituent marine ecosystems, together with the associated physiographic, geographic, geological and climatic factors, allow those ecosystems to function fully and to maintain their resilience to human-induced environmental change. Marine species and habitats are protected, human-induced decline of biodiversity is prevented and diverse biological components function in balance;
>
> (b) hydro-morphological, physical and chemical properties of the ecosystems, including those properties which result from human activities in the area concerned,

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50 See specially Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (OJ L 206, 22.7.1992, p. 7); and Council Directive 79/409/EEC of 2 April 1979 on the conservation of wild birds *(OJ L 103, 25.04.1979, p. 1); both amended by* Council Directive 2006/105/EC of 20 November 2006 adapting Directives 73/239/EEC, 74/557/EEC and 2002/83/EC in the field of environment, by reason of the accession of Bulgaria and Romania; and Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy *(OJ L 327, 22.12.2000, pp. 1–73); and* Directive 2008/32/EC of the European Parliament and of the Council of 11 March 2008 amending Directive 2000/60/EC establishing a framework for Community action in the field of water policy, as regards the implementing powers conferred on the Commission.

51 OJ L 164, 25.6.2008, pp. 19–40. See BOU FRANCH, V., "La política marítima de la Unión Europea y su contribución a la prevención de la contaminación marina", in: Jorge Pueyo Losa; Julio Jorge Urbina (coords.), *La cooperación internacional en la ordenación de los mares y océanos*, Madrid, Iustel, 2009, pp. 89–134. See also COM(2008) 791 final, Brussels, 25.11.2008, Roadmap for Maritime Spatial Planning: Achieving Common Principles in the EU – Communication from the Commission; COM(2007)575 final, Brussels, 10.10.2007 – An Integrated Maritime Policy for the European Union – Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions; and Decision 1600/2002/EC of the European Parliament and the Council of 22 July 2002 laying down the Sixth Community Environment Action Programme.

52 Article 1.1.

> support the ecosystems as described above. Anthropogenic inputs of substances and energy, including noise, into the marine environment do not cause pollution effects;[53]

For this purpose, the Marine Strategy Framework Directive sets down the obligation for Member States to devise and implement their own marine strategies in order to protect the marine and coastal areas under their jurisdiction, preserve them from any damage caused by human activities and ensure the sustainable use of these areas by applying an 'ecosystem-based approach',[54] which has become a key concept in EU legislation on the subject.[55]

The application of this approach, thus, includes both conservation and management through, e.g., the establishment of specially protected areas or the special protection of some species and habitats. Furthermore, the acknowledgement of the limitations of scientific knowledge on the subject, leads to the acceptance of the precautionary principle, according to which:

> (…) preventive measures are to be taken when there are reasonable grounds for concern that human activities may bring about hazards to human health, harm living resources and marine ecosystems, damage amenities or interfere with other legitimate uses of the sea, even when there is no conclusive evidence of a causal relationship. A lack of full scientific evidence must not postpone action to protect the marine environment. The principle anticipates that delaying action would in the longer term prove more costly to society and nature and would compromise the needs of future generations.[56]

The Marine Strategy Framework Directive builds on this conceptual basis a well defined procedure to be followed by Member States while developing their own marine strategies. The procedure begins with some preparatory measures to be completed by 15 July 2012, including (i) an initial assessment of the current environmental status of the waters concerned and the environmental impact of human activities thereon, (ii) a determination of good environmental status; (iii) establishment of a series of environmental targets and associated indicators; and (iv) establishment and implementation of a monitoring programme for ongoing assessment and regular updating of targets. These preparatory measures should end in the development, by 2015 at the latest, of a

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53 Article 3.5, see Annex I of the Directive.

54 Article 1. 2), 3) and 3.5).

55 Defined as: "the comprehensive integrated management of human activities based on the best available scientific knowledge about the ecosystem and its dynamics, in order to identify and take action on influences which are critical to the health of marine ecosystems, thereby achieving sustainable use of ecosystem goods and services and maintenance of ecosystem integrity", see §5. Statement on the Ecosystem Approach to the Management of Human Activities, "Towards an Ecosystem Approach to the Management of Human Activities", Joint Meeting of the Helsinki & OSPAR Commissions 2003, *Record of the meeting* – Annex 5 (available at www.ospar.org and www.helcom.fi).

56 The OSPAR Commission definition of the precautionary principle, retrieved from www.ospar.org/content/content.asp?menu=00120000000065_000000_000000.

programme of measures designed to achieve or maintain good environmental status, which should entry into operation by 2016 at the latest.[57]

The above described requirements and obligations for Member States seem to put in place a sufficiently demanding regulatory framework so as to guarantee the protection of the marine environment against potential negative impact of MRES. It implies that the industrial deployment of MRES shall comply with the same standards as any other human activity by referring it to a broad definition of "pollution" which has to be prevented and tackled by states. To this effect, "pollution" is defined as:

> (…) the direct or indirect introduction into the marine environment, as a result of human activity, of substances or energy, including human-induced marine underwater noise, which results or is likely to result in deleterious effects such as harm to living resources and marine ecosystems, including loss of biodiversity, hazards to human health, the hindering of marine activities, including fishing, tourism and recreation and other legitimate uses of the sea, impairment of the quality for use of sea water and reduction of amenities or, in general, impairment of the sustainable use of marine goods and services.[58]

Nonetheless, although it requires to ensure the sustainable use of the marine environment as one of the objectives to be achieved when designing the programmes of measures, the Marine Strategy Framework Directive requires Member States to take into consideration, in particular, "the social and economic impacts of the measures" including cost-benefit analysis when carrying out impact assessments.[59] In addition, the Directive envisages a number of exceptions according to which Member States shall not be required to take any steps in the event of significant negative impact on the environment where "modifications or alterations to the physical characteristics of marine waters brought about by actions taken for reasons of overriding public interest which outweigh the negative impact on the environment, including any transboundary impact" or the costs would be disproportionate.[60]

In other words, even though compliance with the precautionary principle is mandatory,[61] the analyzed EU framework gives much room for the protection of socio-economic interests within the ecosystem-based approach. This broad margin of appreciation seems to allow possible disruptions or deteriorations of an ecosystem while implementing MRES. Consequently, due attention must be paid to the transposition by Member States[62] and the case law that the European Court of Justice might develop in interpreting the Directive.

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57 Articles 5 and 8–14.
58 Article 3.8.
59 Article 13.
60 Article 14.1, d) and Article 4.
61 See BIRNIE, P. and BOYLE, A., *International Law and the Environment*, 2nd ed., Oxford University Press, 2002.
62 The time limit for transposition of the Directive was 15 July 2010 (Article 26).

On the other hand, the Marine Strategy Framework Directive also establishes the objective of contributing to a better and more coherent implementation of other international systems of marine environment protection applicable in EU waters. To that end, it divides EU maritime spaces into four regions and several sub-regions,[63] which correspond to the geographical scope of the main four international conventions for the protection of marine environment in Europe. The analyzed EU legal framework is, thus, connected to the above mentioned OSPAR[64] and Helsinki[65] Conventions, as well as the Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean (Barcelona Convention) and its additional Protocols[66] and the Convention on the Protection of the Black Sea against Pollution.[67]

The ecosystem-based approach adopted by the Framework Directive implies a high level of regional cooperation, not only between Member States of the EU, but also with non-EU countries. For this reason, the already existent regional and sub-regional institutions and their already existent programmes and activities are envisaged as a means to coordinate and develop new marine strategies and programmes.[68] These legal regimes

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[63] *Article 4.* "Marine regions or subregions. 1. Member States shall, when implementing their obligations under this Directive, take due account of the fact that marine waters covered by their sovereignty or jurisdiction form an integral part of the following marine regions: (a) the Baltic Sea; (b) the North-east Atlantic Ocean; (c) the Mediterranean Sea; (d) the Black Sea. 2. Member States may, in order to take into account the specificities of a particular area, implement this Directive by reference to subdivisions at the appropriate level of the marine waters referred to in paragraph 1, provided that such subdivisions are delimited in a manner compatible with the following marine subregions: (a) in the North-east Atlantic Ocean: (i) the Greater North Sea, including the Kattegat, and the English Channel; (ii) the Celtic Seas; (iii) the Bay of Biscay and the Iberian Coast; (iv) in the Atlantic Ocean, the Macaronesian biogeographic region, being the waters surrounding the Azores, Madeira and the Canary Islands; (b) in the Mediterranean Sea: (i) the Western Mediterranean Sea; (ii) the Adriatic Sea; (iii) the Ionian Sea and the Central Mediterranean Sea; (iv) the Aegean-Levantine Sea. Member States shall inform the Commission of any subdivisions by the date specified in the first subparagraph of Article 26(1) but may revise these upon completion of the initial assessment referred in Article 5(2), point (a)(i)."

[64] To which the EU is a Contracting Party, see Decision 98/249/EC of the Council (OJ L 104, 3 April 1998, p. 1) and Decision 2000/340/EC of the Council (OJ L 118, 19 May 2000, p. 44).

[65] To which the EU is a Contracting Party, see Decision 94/157/EC of the Council (OJ L 73, 16 March 1994, p. 19).

[66] To which the EU is a Contracting Party, see Decision 77/585/EEC of the Council (OJ L 240, 19 September 1977, p. 1) and its amendments of 1995, approved by Decision 1999/802/EC of the Council (OJ L 322, 14 December 1999, p. 32). For further information about the Convention, its Protocols and the Action Plan, see www.unepmap.org.

[67] Find the Convention and more information about the activities of the Secretariat at www .blacksea-commission.org.

[68] *Article 6.* "Regional cooperation. 1. In order to achieve the coordination referred to in Article 5(2), Member States shall, where practical and appropriate, use existing regional institutional cooperation structures, including those under Regional Sea Conventions, covering that marine region or subregion. 2. For the purpose of establishing and implementing marine strategies, Member States shall, within each marine region or subregion, make every effort, using relevant international forums, including mechanisms and structures of Regional Sea Conventions, to coordinate their actions with third countries having sovereignty or jurisdiction over waters in the same marine region or subregion. In that context, Member States shall, as far as possible, build

contain an independent regulatory core which also affects MRES and could complete the EU basic legislation on marine environment protection.

III. THE CASE OF SEA WIND ENERGY IN THE SOUTH SPANISH MARITIME AND COASTAL AREAS

In Spanish law, sea wind energy production is considered a special sort of electricity production regulated by a special regime that applies to sea wind farms.[69] This legal regime is made up of the national statute 22/1988 of 28 July 1988,[70] governing the Spanish coastal areas; the Regulation of 1 December 1989, developing the national statute 22/1988 (Real Decreto 1471/1989);[71] the national statute 9/2006 of 28 April 2006, on the Strategic Environmental Assessment (SEA);[72] the national statute (RD Legislativo 1/2008) on Environmental Impact Assessments (EIA);[73] the Rules governing the administrative procedure (RD 1028/2007) for the authorization of installation of electricity producing devices in the territorial sea;[74] and the Regulation (RD 1955/2000) governing the transport, distribution and supply of electric energy and the procedure for authorization.[75]

As far as the environmental requirements are concerned, the procedure of authorization, which involves up to six different ministries of the central government and may last for several years, is carried out within the framework of the Strategic Environmental Assessment (SEA) of marine areas at national level, and the relevant EIA. The main product of the SEA is the "Sea Wind Map",[76] which serves the preventive protection of the marine environment by determining suitable and non-suitable areas for the installation of any type of MRES.[77]

The SEA of the Spanish marine areas actually establishes three types of zones: non-suitable, suitable subject to conditions and suitable zones. This delimitation takes into consideration specially protected areas, in particular the ecological network Natura 2000, and other areas of exceptional importance for marine biodiversity, such as the Strait of

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cont.

upon relevant existing programmes and activities developed in the framework of structures stemming from international agreements such as Regional Sea Conventions. Coordination and cooperation shall be extended, where appropriate, to all Member States in the catchment area of a marine region or subregion, including land-locked countries, in order to allow Member States within that marine region or subregion to meet their obligations under this Directive, using established cooperation structures prescribed in this Directive or in Directive 2000/60/EC".

69 http://www.mityc.es/energia/electricidad/RegimenEspecial/eolicas_marinas.

70 Boletín Oficial del Estado (BOE) no. 181, 29 July 1988.

71 BOE no. 297, 12 December 1989.

72 BOE no. 102, 29 April 2006.

73 BOE no. 23, 26 January 2008.

74 The additional provision no. 5 extends the application of the procedure to the contiguous zone and the economic exclusive zone. See BOE no. 183, 1 August 2007.

75 BOE no. 310, 27 December 2000.

76 See 'Spanish Sea Wind Map', Instituto para la Diversificación y Ahorro de la Energía, Ministerio de Industria, http://atlaseolico.idae.es/.

77 See the Strategic Environmental Assessment of the Spanish Coast, pp. 66–69, http://www.mityc.es/energia/electricidad/RegimenEspecial/eolicas_marinas/Paginas/estudioEstrategico.aspx.

Gibraltar due to its relevance for migratory animals and other biological groups. There are in total two geographic areas in southern Spain which have been classified by the SEA as non-suitable in the whole width of the marine area regulated by the Strategy (up to 24 nautical miles from the baseline): the Strait of Gibraltar and the Cape of Gata.[78]

In the case of the Strait of Gibraltar, this area presents the particular feature of being as well one of the most important zones for migratory animals in the Mediterranean Sea and the North-East Atlantic Ocean. In spite of this, the Draft of the ministerial regulation establishing the Special Protection Areas (SPA) for Sea Birds in Spain under the Birds Directive[79] does not include the Strait of Gibraltar. The explanation for this omission is the pending diplomatic conflict between Spain and the United Kingdom on the jurisdiction over certain parts of this area. Nevertheless, due to the fact that the parts of the Strait area actually affected by the dispute are rather limited, the Spanish government would find no obstacle to constitute a protection area over those parts of the Spanish territorial sea not subject to controversy either with the United Kingdom or with Morocco.[80]

This problem has seemingly been solved by the SEA which, despite the Strait of Gibraltar being one of the most productive areas of the EU in terms of wind power density and average wind speed[81], has declared the whole area as non-suitable for deployment of MRES. The qualification as non-suitable by the SEA should rule out from the outset the possibility of applying for a government authorization to exploit the area. However, a careful revision of the additional provision no. 3 of the Regulation 1028/2007,[82] reveals that the qualification of an area by the SEA as non-suitable is only relevant for environmental considerations. Moreover, the additional provision no. 2, which prohibits any authorization with regard to some specific areas, does not consider the qualification of an area as non-suitable to exclude such area from the procedure of authorization. In fact, a reference to marine animals is made solely in connection to marine reserves, regulated in Article 13 of the national statute 3/2001, of 26 March 2001, regarding state fisheries.[83] In other words, an area qualified as non-suitable for environmental reasons is not necessarily excluded from an application and authorization to exploit that area.

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78 The Cape of Gata is a natural park covering more than 12.000 hectares of marine and coastal area and protected under Regulations 314/1987, 418/1994 and 37/2008.

79 Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds.

80 See 'España descarta tres parques para evitar conflictos diplomáticos', EL PAIS – *Madrid*, 19 October 2011. For an analysis of the international status of marine areas subject to Spanish jurisdiction in the Strait of Gibraltar and the disputes with Morocco and the United Kingdom, see GUTIÉRREZ CASTILLO, V.L., "Estudio del régimen jurídico del Estrecho de Gibraltar: conflictos de soberanía, espacios marinos y navegación", in DEL VALLE GÁLVEZ, J.A., El Houdaïgui, R./ ACOSTA SÁNCHEZ, M.A. (coord..) *Las dimensiones internacionales del Estrecho de Gibraltar*, Dykinson, 2006, pp 292 et seq.; and GUTIÉRREZ CASTILLO, V.L., *España y sus fronteras en el mar. Estudio de la delimitación de sus espacios marinos*, Dykinson, Madrid, 2004.

81 See 'Spanish Sea Wind Map', Instituto para la Diversificación y Ahorro de la Energía, Ministerio de Industria, http://atlaseolico.idae.es/.

82 BOE no. 183, 1 August 2007, see Article 16 on the decision criteria applicable to the authorization process.

83 BOE no. 75, 28 March 2001.

This qualification only means that during the evaluation of the application the environmental criterion will definitely speak against granting the authorization.

This procedural weakness does not seem to be coherent with the purported preference given to environmental protection and conservation. Yet, serious concerns arise when examining these provisions together with the evaluation criteria for granting the exploitation of an area established in article 16 of the Regulation 1028/2007. The environmental impact is considered as just another criterion together with socio-economic factors in paragraph f), on a long list of criteria related to economic profitability and technological aspects.

IV. FINAL REMARKS

The previous analysis shows how the international regime that shall govern the industrial implementation of MRES in the Mediterranean Sea establishes a rather sound conceptual framework in order to protect marine ecosystems against potential hazardous effects derived from this industry. This international framework, consisting of several international treaties and EU legislation, creates a regulatory system that seeks a holistic protection of the marine environment and fosters sustainable use policies in the area by the relevant states including coordination with other geographical areas and non-EU states.

On the other hand, this international regime reveals some serious weaknesses in the Mediterranean area. Even though the introduction of EU legislation in the subject has represented a very significant increase in the level of environmental concern and protection in the Mediterranean spaces of the EU, with the design of SEAs and EIAs and the adoption of an ecosystem-based approach, the European regulation is still a developing body of rules which mainly aims at laying the foundations for a future stronger regime, if necessary. The analyzed EU regulation seems to be excessively worried about the economic considerations, unwilling to set too stringent limits and controls over Member States in a political area where many Member States experience a serious economic and energetic crisis. Therefore, EU law does not seem to represent a sufficiently strong barrier against state policies which could negatively affect the Mediterranean Sea.

This international legal landscape is unfortunately not improved by the system of the Barcelona Convention. Even though the Protocols concerning ICZM and Specially Protected Areas and Biological Diversity in the Mediterranean provide for a seemingly strong protection regime, no such Specially Protected Areas have been established by the coastal states of the Strait of Gibraltar (Spain, U.K. and Morocco), making the whole regime ineffective.[84] And the ICZM Protocol, not ratified by Morocco, introduces a geographically very limited regime with relatively weak compliance mechanisms, which is still in a rather early stage of development.

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[84] The International Union for Conservation of Nature and Natural Resources (IUCN), a global environmental organization created by States and NGOs, is working as an international technical forum for the creation of a Special Protected Area from the Strait of Gibraltar to the Sea of Alboran, even though so far no positive results are in sight, see 'Towards a better Governance of the Mediterranean', Report of the IUCN's Group of Experts 2007–2008, April 2009.

The practical result of the above described regulatory picture is a broad margin for the states to develop and apply their own protection policies and give priority to either socio-economic or rather environmental interest in the industrial development of MRES. From that point of view, it can be claimed that the international legal regimes governing MRES in the Mediterranean Sea are still weak and that strong further developments are necessary in order to guarantee an optimal environmental protection when deploying MRES.

Ultimately, the fact that the effective scope of the international protection regime strongly depends on each coastal state, makes the specific development of this regime be determined by local political conditions, which can be observed in the case of the some parts of the south coast of Spain. For the moment, aside from the decisive financial shortages which hold Spanish Administrations and industry within the borders of respect for marine and coastal environment, it is the refusal from the civil society to host the largest sea wind farm in Europe near the Cape of Trafalgar, on the Western margin of the area of the Strait of Gibraltar, that has paralyzed so far the authorization in a procedure that has already lasted several years,[85] a politically sensitive situation that might change just as local financial and political perceptions and needs do so.

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[85] See 'Trafalgar no quiere molinos. Chipiona se postula para heredar los planes eólicos rechazados por sus vecinos', Pedro Espinosa – EL PAIS – *Cádiz* – 2 May 2009.