

# *Spain and the Law of the Sea: 20 years under LOSC*

## Non-living marine resources

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### (A) INTRODUCTION

When we talk about non-living marine resources we generally think of hydrocarbons and minerals, and this perception lay behind the creation of new marine spaces outside territorial waters, starting with the 1945 Truman Proclamation, which above all owed its existence to the awareness of the importance of the oil deposits underlying the continental shelf. However, it should also be acknowledged that it is also possible to exploit other types of marine energy resources, which enjoy the advantage, among others, of not being finite. It is therefore fitting to begin by pointing out, coinciding with the 35th anniversary of the UN Convention on the Law of the Sea<sup>1</sup>, that the latter provided an appropriate framework in this regard, which could turn out to be particularly promising for Spain.

The provision contained in Article 56(1)(a) LOSC, when it refers to the “sovereign rights” of coastal States concerning “other activities for the economic exploitation and exploration of the zone, such as the production of energy from the water, currents and winds”, is not intended to be exhaustive and thus encompasses the exploitation of other kinds of marine renewable energies that are not specifically mentioned and will be referred to below. No voices have been raised against this interpretation, which has never been questioned<sup>2</sup>.

This study analyses Spanish practice regarding the exploitation and exploration of offshore

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<sup>1</sup> UN Convention on the Law of the Sea, [1833 UNTS 3](#) (adopted 10 December 1982, entered into force 16 November 1994) (LOSC hereinafter).

<sup>2</sup> UN Doc. A/67/79, at p. 10.

hydrocarbons, on the one hand, and of marine renewable energies, on the other, as well as certain significant aspects connected with both. It should be noted from the outset that Spain's situation is very different from that of other European countries such as those bordering the North Sea, i.e. Norway, the UK, Denmark or the Netherlands, all of which enjoy substantial hydrocarbon resources. Although the advent of fracking has greatly revolutionised the statistics, the trend seems to be that unexploited marine deposits are more equitably distributed throughout the world than conventional land-based hydrocarbons, and indeed appear to lie outside OPEC's sphere of influence<sup>3</sup>. However, going by the results of all the prospecting carried out to date, no hydrocarbon deposits of sufficient quantity or quality to make their exploitation commercially viable have been discovered on Spanish soil or in Spanish territorial waters.

Given the above, in the case of Spain the exploitation of marine renewable energies would appear to be particularly favourable, even in the face of the tremendous challenges and obstacles that need to be overcome. The reasons for supporting their development are as substantial as they are heterogeneous: not only do renewable energies help to mitigate climate change and guarantee sustainable development, but the absence of significant hydrocarbon deposits in Spain and/or waters under Spanish jurisdiction and the country's extensive coastline, over 7000 km long, also make a solid case for their exploitation.

## (B) SPAIN AND OFFSHORE HYDROCARBONS

### (I) International Law

#### (a) *Guiding principles*

These pages refer only to spaces under national jurisdiction and take as their starting point the familiar rights and obligations of all States regarding the various marine spaces, regulated by LOSC, and more specifically those concerning inshore waters, territorial seas, EEZs and the continental shelf. A number of premises, which will be set out below, must also be taken into consideration. Firstly, unlike renewal energy installations, those used for exploring and exploiting hydrocarbons are increasingly located further and further offshore. Secondly, limits pending ratification and/or some of the submissions put forward to extend Spain's continental shelf may be of future relevance for the issue in question, involving a change of legal regime of the spaces affected and the exploitation of their resources<sup>4</sup>. Finally, and with specific reference to hydrocarbon production activities, there are multiple questions of particular importance from an international legal perspective, of which we will consider only a few, restricted to obligations regarding the use of certain safety techniques or practices concerning the technology employed, the prevention of accidents and environmental protection, due to the potentially highly adverse effects of such activities. In this respect it is worth noting that hydrocarbon exploration and exploitation activities generate, in addition to any possible

<sup>3</sup> IEA: World Energy Outlook (2008), at pp. 257 y 258; IEA: World Energy Outlook (2013).

<sup>4</sup> On this question, see the contribution by J.M. De Faramiñán Gilbert, in this same Agora: "Spain: Continental Shelf and its Extension".

accidental pollution caused by a major spill, a degree of operational pollution as a consequence of their ongoing operations. These include, once the necessary scientific marine research activities have taken place, preparatory activities such as seismological surveys, seabed and subsoil prospection, sampling and exploratory drilling on the one hand, and on the other the exploitation activities themselves, involving the installation of a facility for extracting resources and related activities, drilling, the extraction, processing and storage of the resource, transporting the latter to shore by means of a pipeline and/or loading onto tankers, as well as maintenance, repair and other ancillary work<sup>5</sup>. Thus, even though no full-scale commercial exploitation activities actually take place, only exploratory operations, as in the case of Spain, pollution nevertheless occurs.

*(b) Spain and international instruments*

The prevention of and reaction to the environmental impact of oil and gas rigs and other kinds of facility located in the marine environment for the purpose of extracting offshore hydrocarbons is the subject of international regulation, over and above the general provisions of LOSC, which provide a basic regulatory framework<sup>6</sup>. This regulation, however, falls well short of that concerning pollution originating from vessels<sup>7</sup>. In addition to LOSC there is another maritime convention with universal scope, the International Convention on Oil Pollution Preparedness, Response and Cooperation (adopted within the framework of the IMO in London in 1990; entered into force in 1995 and ratified by Spain also in that year<sup>8</sup>). The general purpose of this Convention was, as stated in its preamble, is to “promote international cooperation and to enhance existing national, regional and global capabilities concerning oil pollution preparedness and response”. However, although it contemplates pollution by what it refers to as “offshore units”<sup>9</sup>, it does not refer exclusively to the pollution caused by them, but also to that caused by vessels, and thus does not focus on best practices for carrying out extractive activities.

It should also be noted that together with the treaties referred to above, other instruments of equally universal scope have been drafted by a variety of international institutions, within the sphere of soft law, amongst them those adopted by the IMO<sup>10</sup>, the UNEP<sup>11</sup> or the World Bank<sup>12</sup>.

<sup>5</sup> List taken from the definition of “activities concerning exploration and/or exploitation of the resources” contained in the 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, adopted on 14 October 1994 in Madrid (Art. 1); OJEU, L4/15-34, 9 January 2013.

<sup>6</sup> See arts. 192 ff, especially arts. 194(3)(c) and (d), 198, 199, 208 and 214. This framework has been the subject of criticism due to the vagueness and programmatic nature of its rules in this regard, as well as for its shortcomings concerning spaces outside national jurisdiction.

<sup>7</sup> Pollution of this kind has generated a more prolific regulatory response in the international sphere, with universal scope, for which the IMO has been the main driving force.

<sup>8</sup> BOE No. 133, 5 June 1995.

<sup>9</sup> Which it defines as “any fixed or floating offshore installation or structure engaged in gas or oil exploration, exploitation or production activities, or loading or unloading of oil” (art. 2(4)).

<sup>10</sup> MODU Code, 2009 (A 26/Res. 1023), 2 December 2009.

<sup>11</sup> *Legal aspects concerning the environment related to offshore mining and drilling within the limits of national jurisdiction*, produced by the Working Group of Experts on Environmental Law in 1982 (YBEO/GC.9/5/Add. 5, annex III and UNEP/GC.10/5, annex I).

<sup>12</sup> See for example [Environmental, Health, and Safety General Guidelines and Environmental, Health and Safety](#)

(c) *Spain and regional legislation*

A number of regulations at regional level dealing with the issue under consideration have also come into existence. As far as Spain is concerned, the following are of particular relevance:

(i) *The North-East Atlantic*

Spain, together with the EU and other States, is Party to the Convention for the Protection of the Marine Environment of the North-East Atlantic (or OSPAR Convention, adopted in Paris in 1992 and in force since 1998). This instrument is endowed with an institutional mechanism, the OSPAR Commission, which is made up of representatives of all the Parties. Although the Convention itself contains no provisions concerning the technical requirements to which installations and rigs must conform, the Commission has adopted a number of decisions in this regard. Furthermore, in its Strategy for the Protection of the Marine Environment of the North-East Atlantic 2010-2020 it devotes a specific section to the Offshore Oil and Gas Industry, in which it proposes to “[improve] management mechanisms so as to safeguard human health and to conserve marine ecosystems and, when practicable, restore marine areas which have been adversely affected”. Its targets include a reduction of oil in produced water discharged into the sea and, to this end, the development of Best Available Techniques (BAT) and Best Environmental Practices (BEP)<sup>13</sup>.

(ii) *The Mediterranean Sea*

As far as the Mediterranean Sea is concerned, the principal legislation comprises the Barcelona Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean (adopted in 1976 and amended in 1995) to enlarge its goals, together with some of its accompanying Protocols, especially that for the Protection of the Mediterranean Sea against Pollution Resulting from Exploration and Exploitation of the Continental Shelf and the Seabed and its Subsoil (commonly referred to as the Offshore Protocol, adopted in Madrid in 1994 and entering into force in 2011). The Protocol contains two “general undertakings”: to take, individually or through cooperation with other States, all appropriate measures to “prevent, abate, combat and control pollution” from activities in the area, ensuring, *inter alia*, “that the best available techniques, environmentally effective and economically appropriate, are used for this purpose”; and to “ensure that all necessary measures are taken so that activities do not cause pollution”<sup>14</sup>. It envisages an authorization system based on compliance with a series of requirements<sup>15</sup>. It also contains a series of restrictions on harmful or

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[\*Guidelines for Offshore Oil and Gas Development\*](#). These guidelines, first adopted in 1998 and subsequently revised in 2007 and 2015, respectively, contain “general and industry-specific examples of Good International Industry Practice”, indicating the “performance levels and measures generally considered to be achievable in new facilities by existing technology” with regard to “air emissions”, “wastewater discharges”, “solid and liquid waste management”; “noise generation” and “spills”.

<sup>13</sup> OSPAR Commission: [The North-East Atlantic Environment Strategy. Strategy of the OSPAR Commission for the Protection of the Marine Environment of the North-East Atlantic 2010-2020](#).

<sup>14</sup> Art. 1.

<sup>15</sup> Arts. 4-7.

noxious substances and materials, sewage, oily mixtures, drilling fluids and garbage<sup>16</sup>, together with various safeguards (safety measures, contingency planning, reporting measures and mutual assistance in cases of emergency)<sup>17</sup>. Further provisions include those concerning the removal of installations<sup>18</sup>, specially protected areas<sup>19</sup> and cooperation<sup>20</sup>.

The European Union acceded to the Offshore Protocol in December 2012, but paradoxically, despite being the place of its adoption (Madrid) and acting as its depositary, Spain has yet to ratify it. The EU Council, in its Decision to accede to the Protocol, explained that the discovery of large fossil fuel reserves in the Mediterranean makes it likely that oil and gas exploration and exploitation activities will increase in the near future, referring to the existence of over 200 active offshore platforms in the Mediterranean at the end of 2012, with more in the planning stage. Consequently, as a result of “the semi-enclosed nature and special hydrodynamics of the Mediterranean Sea, an accident of the kind that occurred in the Gulf of Mexico in 2010 could have immediate adverse transboundary consequences on the Mediterranean economy and fragile marine and coastal ecosystems”<sup>21</sup>.

### (iii) *Spain and The Safety of Offshore Oil and Gas Operations Directive*

The 2010 *Deepwater Horizon* disaster led to the adoption of the Safety of Offshore Oil and Gas Operations Directive, adopted in 2013<sup>22</sup> and giving Member States until 19 July 2015 to bring into force the laws, regulations and administrative provisions necessary to comply with its provisions<sup>23</sup>. Its principle objective, outlined in Article 1, is to establish minimum requirements for preventing major accidents in offshore oil and gas operations and “limiting” their consequences. To this end, the directive establishes a series of essential elements, the first being that in order to grant or transfer licences to carry out offshore oil and gas operations States shall take into account the “capability of an applicant”<sup>24</sup>. Furthermore, States shall ensure that operators and owners establish “schemes for independent verification”, and prepare a description of such schemes, without prejudice to the responsibility of the said operators or owners for the correct and safe functioning of the equipment and systems under verification<sup>25</sup>. In the case of situations of emergency, States are to ensure that internal emergency response plans prepared by operators or owners fulfil certain requirements including “an analysis of the oil spill response effectiveness”, and are put into action without delay to respond to any major accident or a situation where there is an immediate risk of a major accident, as well as being consistent with the external emergency response plan prepared by States themselves<sup>26</sup>. Regarding liability, the licensee oil and gas companies shall be “financially liable for the prevention

<sup>16</sup> Arts. 8-12.

<sup>17</sup> Arts. 15-19.

<sup>18</sup> Art. 20.

<sup>19</sup> Art. 21.

<sup>20</sup> Arts. 22-27.

<sup>21</sup> Paras. 4 and 10 of the Council Decision on the accession of the EU to the Offshore Protocol.

<sup>22</sup> OJEU L178/66, 12 June 2013.

<sup>23</sup> Art. 41.

<sup>24</sup> See Arts. 3-9.

<sup>25</sup> Art. 17.

<sup>26</sup> Arts. 14 ff.

and remediation of environmental damage” caused by operations carried out by them or by other operators on their behalf<sup>27</sup>. Cooperation between Member States in various areas is also envisaged, including the exchange of knowledge, information and experience.

## (2) Spanish practice and the law

Law 34/1998, 7 October, on the Hydrocarbons Sector, regulates, amongst other activities, “the exploration, prospecting and exploitation of hydrocarbon deposits and subterranean storage facilities”<sup>28</sup>. According to the law, the General State Administration is responsible for granting exploration authorisations, prospecting permits and exploitation licenses in marine subsoil areas. A prospecting permit gives the holder the exclusive right to prospect, in the area to which it refers, for hydrocarbons and subterranean storage facilities for them, in the conditions determined by the regulations and the previously approved prospecting plan<sup>29</sup>. The granting of a prospecting permit gives the holder the exclusive right to obtain exploitation licenses, which in turn enable their holders, as well as to carry out prospecting work in the specified area, to exploit the resources they discover, either by extracting hydrocarbons or by using underground structures as storage facilities for hydrocarbons of any kind.<sup>30</sup>

The Law 34/1998 also contemplates, with regard to operations carried out in the marine subsoil, that the activities performed “in the subsoil of territorial waters and other sea bottoms under Spanish sovereignty shall be regulated by this Act, by legislation in force covering the coastline, territorial waters, exclusive economic zone and continental shelf, and by the international agreements and conventions to which the Kingdom of Spain is party”<sup>31</sup>. Furthermore, “when activities take place in the said spheres, regardless of whether they affect land areas or not, a prior report by the Autonomous Region affected will be a mandatory requirement in the procedure for granting licences to exploit subterranean hydrocarbon deposits and subterranean storage facilities”<sup>32</sup>.

In line with the provisions contemplated by LOSC for the protection and conservation of the marine environment in the different spaces under national jurisdiction and Directive 2008/56/CE, of 17 June 2008, establishing a framework for community action in the field of marine environmental policy (Marine Strategy Framework Directive)<sup>33</sup>, Law 41/2010, 29 December, on the Protection of the Marine Environment is designed to establish “the legal regime covering the adoption of the necessary measures to achieve or maintain the good environmental status of the marine environment by means of planning, conservation, protection and improvement”<sup>34</sup>. Similarly, Law 21/2013, 9 December, on Environmental Assessment (transposing the 2011 EU Directive on the assessment of the effects of

<sup>27</sup> Art. 7.

<sup>28</sup> [BOE No. 241](#), 8 October 1998. Arts. 1(2)(a) and 7.

<sup>29</sup> Art. 9.

<sup>30</sup> *Ibid.*

<sup>31</sup> Art. 32.

<sup>32</sup> *Ibid.*

<sup>33</sup> [OJEU L164](#), 25 June 2008.

<sup>34</sup> [BOE No. 317](#), 30 December 2010 (art. 1).

certain public and private projects on the environment<sup>35</sup>), includes activities relating to the “exploitation or use of natural resources or the soil and subsoil, as well as of marine waters”<sup>36</sup>, subjecting them to a series of environmental assessment principles that include the following: “protection of the environment”, “precaution”, “preventive and precautionary action”, “proportionality”, “public participation” and “sustainable development”<sup>37</sup>.

It is also worth noting that in late 2016 the European Commission requested Spain, together with other Member States (the UK, Bulgaria and Poland) to fully transpose the Directive on safety in offshore oil and gas operations, still pending at the time<sup>38</sup>. This was finally achieved with the promulgation of Royal Law-Decree 16/2017, 18 November, establishing safety requirements for the prospecting and exploitation of oil and gas in the marine environment<sup>39</sup>.

Similarly, it should be noted that the Spanish National Security and Maritime Security Strategies, in line with the EU Maritime Security Strategy, introduce a goal of maritime security that takes as one of its starting points energy vulnerability as a threat to be faced. These documents are intended, amongst other related objectives, to promote a policy of security in maritime areas in order to maintain freedom of navigation and protect maritime traffic and critical maritime infrastructures; protect and preserve the coastline, marine resources and the marine environment; and prevent and respond to catastrophes or accidents occurring in the marine environment<sup>40</sup>.

Although oil and gas prospecting on dry land in Spain dates back to the nineteen-forties, it is common knowledge that results in terms of the actual exploitation of such resources have been few and far between<sup>41</sup>, and that the “small number of Spanish oilfields and the low level of production, which is practically testimonial”, as acknowledged by the competent Ministry in its latest reports, means that Spain has to import almost 100% of the oil it consumes<sup>42</sup>. As far as offshore oil and gas exploration is concerned, the outlook is equally pessimistic, although there have been moments when expectations were raised by indications of the possible existence of submarine deposits, particularly off the Canary Islands. This led to a temporary change in the *status quo*, with divided opinions in at least part of the Spanish population regarding the beneficial nature of activities of this kind. The discovery of oil in 2014 by the Anglo-Turkish company Genel Energy in waters under Moroccan

<sup>35</sup> [OJEU L26](#), 28 January 2012.

<sup>36</sup> [BOE No. 296](#), 11 December 2013. Art. 5(3)(b).

<sup>37</sup> Art. 2.

<sup>38</sup> See the [Proposal for a Draft Bill establishing safety provisions in the exploration and exploitation of hydrocarbons in the marine environment](#) (General Directorate for Energy Policy and Mines, in Spanish only) and the [Report on the said Proposal](#) (also in Spanish only).

<sup>39</sup> [BOE No. 280](#), 18 November 2017.

<sup>40</sup> Presidency of the Spanish Government: The National Security Strategy: Sharing a Common Project (2013) and The National Security Strategy (2017); Presidency of the Spanish Government: National Maritime Security Strategy (2013).

<sup>41</sup> Cf. Deloitte and Stevens & Bolton, *Civil liability, financial security and compensation claims for offshore oil and gas activities in the European Economic Area. Final Report*, 14 August 2014 (European Commission - DG Energy), at pp. 41-42.

<sup>42</sup> Spanish Ministry of Industry, Energy and Tourism, *La Energía en España 2013*, Madrid, 2014, at p. 140 e *id.*, at p. 97. The report highlights the additional difficulties caused by the adverse crude oil price environment, the complexity of environmental regulations and growing social awareness.

For a study of Spain's position in this regard, see G. Escribano, “La seguridad energética española en un escenario en transición”, 166 *Cuadernos de Estrategia* (Energía y Geoestrategia 2014, Ministerio de Defensa, Madrid, 2014), pp. 93-125.

jurisdiction (at the *Sidi Ifni Musa-I* well, located off the coast of Agadir at a depth of 2825 m under the seabed) fuelled expectations of hydrocarbons also being found in nearby waters, this time under Spanish jurisdiction, at approximately 60 km from Lanzarote and Fuerteventura and at a depth of 8500 m<sup>43</sup>, where the Spanish oil company Repsol was prospecting. These hopes were dashed, but prospecting continued at different stages in other locations (e.g. off the Mediterranean coast, between Malaga and Almeria, by CNWL Oil España and Repsol; near Tarragona, by Repsol; off the Costa Brava and Valencia by Capricorn Spain Limited; between the Costa Brava and the Balearic Islands by Spectrum Geo Limited; off the Balearic Islands by Cairn Energy<sup>44</sup>; off the Costa del Sol by Repsol and the Canadian company Chinook<sup>45</sup>; or by Repsol, this time for gas, off the coast of Biscay).

The most controversial of all the above-mentioned projects was the one carried out in waters off the Canary Islands. The Spanish government, when justifying its decision to authorise Repsol to prospect for oil, cited three major reasons: firstly, the potential beneficial effect of the discovery and exploitation of hydrocarbon deposits on oil imports, and thus on Spain's energy dependency; secondly, increased earnings (in this regard, the Autonomous Region of the Canary Islands would receive extraction royalties to compensate for the risks involved); and finally, the positive impact on employment statistics. The situation, however, produced a lively reaction with the regional government of the Canary Islands changing its initially favourable posture to a negative one, joining the ranks of the *Cabildos* (a form of local administration peculiar to the Canaries), ONGs and other members of civil society. Their most serious objections concerned the high levels of risk generated by prospecting for the protection of the environment, biodiversity and the local population's income and way of life, which are fundamentally dependent on tourism. In 2014 the Spanish government approved an environmental impact assessment submitted by Repsol. In June of the same year the Supreme Court turned down the seven appeals lodged against the prospecting project by the Regional Government of the Canary Islands and environmental organisations such as Greenpeace, Oceana and the World Wildlife Fund, amongst other institutions, giving the go-ahead for prospecting to commence later in the year<sup>46</sup>. In early 2015, however, Repsol cancelled its exploration activities in the Canary Islands on the basis that the gas they had found was of insufficient quantity and quality to ensure the viability of its commercial exploitation.

In the case of gas Spain is a net importer, producing practically no gas of its own<sup>47</sup>. On the other

<sup>43</sup> See [El País, 21 October 2014](#).

<sup>44</sup> This project for test drillings close to Ibiza, for which permission was sought by Cairn Energy, led to demonstrations in the Balearic Islands in late October 2014, and to the posterior extinction of permits; see [El Mundo, 2 June 2015](#).

<sup>45</sup> The Spanish Ministry of Agriculture, Food and the Environment turned down the environmental impact assessment submitted by Chinook for its project off the coast of Granada and Malaga in late October 2014. According to the NGO Oceana, in some cases companies provide insufficient information by giving "surface data even though the activities are to take place underwater", omitting to include certain species and habitats, etc.; see [Málaga y Granada se salvan de los sondeos de hidrocarburos](#) (2014).

<sup>46</sup> Regarding this case, see J. Sanz Larruga, "Ante la conflictividad ambiental que viene del mar: el caso de los sondeos petrolíferos en Canarias", 99-100 *Revista Vasca de Administración Pública* (Special Issue May-Dec. 2014), pp. 2703-2722.

<sup>47</sup> In 2015 the relevant Ministry described the national production of gas, standing at a mere 776 GWh, as practically zero. At 31 December of the same year only one license had been issued for the specific exploitation of gas in marine areas: the *Poseidón* field, off the coast of Huelva; Ministerio de Industria Energía y Turismo, *La Energía en España 2015* (Madrid, 2016), at pp. 99 and 106.

hand, the country boasts the largest LNG regasification capacity of all European nations and in this sense is a major player in guaranteeing the supply of gas on the continent. However, it has no floating regasification plants<sup>48</sup>, whose existence would undoubtedly confer additional advantages<sup>49</sup>. Spain also imports natural gas through two one-way underwater pipelines, one between Morocco and Tarifa and the other between Algeria and Almería<sup>50</sup>, the latter through the underwater gas pipeline *Medgaz*, operative since 2011.

In this context, reference should also be made to the controversial *Proyecto Cástor*, a large-scale underground natural gas storage facility located in the marine subsoil approximately 21 kilometres off the coast of Castellón and authorised by means of a Royal Decree in 2008<sup>51</sup>. The approximately 500 tremors recorded in 2013 (reaching magnitudes of up to 4 degrees on the Richter Scale and thus being felt by the local population) generated a great deal of controversy, leading the licence-holder to cancel the project. The Spanish government cancelled the licence the following year, giving the company a sum in compensation and ordering the “mothballing” of the underground storage facility and prohibiting any further injection or extraction of natural gas<sup>52</sup>. A subsequent report produced in 2017 by scholars at MIT and Harvard University confirmed that the tremors were caused by gas being injected into the underground storage facility, whilst exonerating both the operator and the government from liability on the grounds that it was “unreasonable to expect that a study with industry-standard methodologies would have reached these conclusions ahead of the injection”<sup>53</sup>. The case gave rise to several court proceedings, all of which are still pending resolution, while further technical reports have been commissioned to determine the best way to move forward. The gas already injected has thus not been extracted and no moves to dismantle the facilities have as yet been made. The environmental problems generated by this project, combined with its high financial costs (estimated at over 4000 million Euros, of which a significant amount was publicly funded), have led to calls from a number of environmental organisations for protocols to be put in place to avoid the recurrence of absurd ventures of this kind, given the unacceptably high levels of financial and

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It should be noted that in the case of the *M/V “Louisa”*, which reached the ITLOS, the Applicant stated that the ship, sailing under the flag of Saint Vincent and the Granadines, had been sent to Spain in 20014 to carry out survey activities relating to the possible existence of gas in the Bay of Cadiz. The permit granted by the Spanish Directorate-General for Coasts, however, only referred to the ‘mapping’ of the seabed and possible sampling. The vessel was not authorised to carry out any subsequent prospecting relating to the existence of oil and gas: see [Case No. 18, The M/V “Louisa” Case](#) (Saint Vincent and the Granadines v. Kingdom of Spain).

<sup>48</sup> The six facilities currently in operation are all shore-based.

<sup>49</sup> The U.S. Energy Information Administration highlights their flexible deployment capabilities, their cost-effectiveness and the fact that countries beginning to import LNG (Egypt, Jordan and Pakistan in 2015) were opting for this technology; IEA: *World Energy Outlook* (2016) (DOE/EIA-0484, 2016), at p. 51.

<sup>50</sup> Ministerio de Industria Energía y Turismo, *supra* n. 47, at p. 329.

<sup>51</sup> Royal Decree 855/2008, 16 May, granting Escal UGS, S. L. an operating licence for the underground storage of natural gas going by the name of “Castor”, [BOE No. 136](#), 5 June 2008.

<sup>52</sup> Royal Decree-Law 13/2014, 3 October, on the adoption urgent measures concerning the gas system and ownership of nuclear power stations, [BOE No. 241](#), 4 October 2014. Nevertheless, the Spanish Constitutional Court considered afterwards (December 2017) that a law should have been used instead a Royal Decree-Law since there was no justification of an extraordinary and urgent necessity.

<sup>53</sup> [Coupled Flow and Geomechanical Modeling and Assessment of Induced Seismicity, at the Castor Underground Gas Storage Project. Final Report](#) (April 24, 2017), at p. 74.

environmental risk they involve.

A further point to note is the possible existence of methane hydrate, a fossil fuel with potentially negative consequences for the environment<sup>54</sup>, under the seabed in Spanish waters. To date, however, the only indications available point to the existence of deposits in the Gulf of Cadiz and the Alboran Sea.

Finally, the Spanish government appears to be aware of the existence of a mineral-rich underwater mountain in waters to the south of the Canary Islands. More specifically, British scientists claim to have discovered what they calculate to be 2670 tonnes of tellurium, a scarce substance of great strategic importance in the energy sector due its use in the production of batteries, wind turbines and solar panels<sup>55</sup>.

### (C) SPAIN AND MARINE RENEWABLE ENERGIES

#### (1) Kinds of marine renewable energies and general overview

Marine renewable energies are a form of renewable energy deriving from the various natural processes that take place in the marine environment. There are four kinds of such energy, namely ocean energy; wind energy from turbines located in offshore areas, geothermal energy derived from submarine geothermal resources; and bioenergy derived from marine biomass, particularly ocean-derived algae. In turn, renewable ocean energy comes from six distinct sources, each with different origins and requiring different technologies for conversion, but having in common the fact that they are all obtained from the potential, kinetic, thermal and chemical energy of seawater. These six distinct sources are waves, tidal range, tidal currents, ocean currents, ocean thermal energy conversion and, finally, salinity gradients. More specifically, waves, which are generated by the action of wind on water, produce energy that can be harnessed. With regard to tides, their amplitude generates energy through the cyclical rise and fall in the height of the ocean. The same is true of tidal currents, which are generated by horizontal movements of water, their flows resulting from the rise and fall of the tide. Ocean currents, which exist in the open ocean, are another source of energy. Ocean thermal energy conversion, on the other hand, is a technology for taking advantage of the solar energy absorbed by the oceans, based on the temperature difference between the top layers of water and those at a greater depth, which are much colder. However, a minimum temperature difference of 20°C between layers is needed in order to harness this energy, which can therefore only be produced in certain parts of the world, such as equatorial and tropical regions. Finally, salinity gradients arise from the mixing of freshwater and seawater, which takes place at river mouths and releases energy as heat. This energy can be harnessed through a process of inverse electrodialysis, based on the difference in

<sup>54</sup> In terms of the atmospheric emissions produced by its burning and the deterioration of marine ecosystems as a result of its mining. See, for example, Greenpeace, [Hidratos de gas](#) (Briefing, 2008, in Spanish).

<sup>55</sup> See D. Shukman, [Renewables' deep-sea mining conundrum](#), *Science & Environment* (11 April 2017).

chemical potential between freshwater and seawater, or through an osmotic power process based on the natural tendency of the two types of water to mix together<sup>56</sup>.

The development status of these technologies differs widely, although most of them are still either embryonic or in their infancy, ranging as they do from the conceptual stage to the prototype stage, taking in the pure research and development stage on their way<sup>57</sup>. The IPCC highlights tidal range technology as being the most advanced, and in fact as the only form of ocean energy technology (excluding marine wind energy technology) that can currently be considered 'mature'.<sup>58</sup> Although marine energy technologies are still generally at an early stage of development, it has to be said that they could make much swifter progress if investment in them were higher. Prominent among the leaders in the development and commercialisation of marine renewable energy technologies are nations such as the United Kingdom, Ireland, the United States, Australia, New Zealand, Finland, Denmark, Belgium, France, Germany and Japan<sup>59</sup>. Nevertheless, the list of leading countries in this sector varies according to the source consulted. For example, the countries mentioned in the Report of the UN Secretary-General on marine renewable energies, published in 2012, do not exactly coincide with those that appear in other places, such as specialist websites<sup>60</sup>. Furthermore, the economic crisis which has been affecting a number of the world's developed countries has had necessarily a negative effect on the flow of investment towards technologies of this kind.

Although forecasts vary widely, depending on who is making the prediction, a prudent approach indicates that any significant deployment of ocean energy technologies is unlikely to occur before 2030, whilst commercial deployments are expected to continue expanding beyond 2050.<sup>61</sup> It remains to be seen, therefore, when these technologies will be able to make a significant contribution to the global energy supply. At the moment, only marine wind energy can be considered to be relatively close to beginning to be competitive with fossil fuels or nuclear energy. However, it must be said that in spite of the incipient status of all marine renewable energies forecasts of their potential are on the whole clearly optimistic. According to the IPCC, the potential for technically exploitable marine renewable energies, marine wind power excluded, is estimated at some 7,400 exajoules (EJ) per year.<sup>62</sup> This figure is considered to be more than enough to meet human energy needs not only at present, but also well into the future.<sup>63</sup>

If we take the parameters of sustainable development, and by extension its three constituent dimensions, namely its economic, social and environmental aspects, it is clear that marine renewable

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<sup>56</sup> IPCC, *Special Report on Renewable Energy Sources and Climate Change Mitigation* (2011), at pp. 503 ff.

<sup>57</sup> *Ibid.*, Chap. 6(3)(1).

<sup>58</sup> *Ibid.*

<sup>59</sup> Nevertheless, the list of leading countries in this sector varies according to the source consulted. For example, the countries mentioned in the Report of the UN Secretary-General on marine renewable energies, published in 2012, do not exactly coincide with those that appear in other places, such as specialist websites. See, in any case, the above-mentioned report, UN Doc. A/67/79 (dated 4 April 2012), at p. 8.

<sup>60</sup> See, in any case, *ibid.*

<sup>61</sup> IPCC, *supra* n. 56, at p. 527.

<sup>62</sup> *Ibid.*, at p. 501.

<sup>63</sup> *Ibid.* and UN Doc. A/67/79, *supra* note n. 59, at pp. 6-7.

energies score very highly in this regard, as the UN Secretary General's 2012 report demonstrates<sup>64</sup>. A similar conclusion was also reached in the UNICPOLOS meeting devoted to marine renewable energies<sup>65</sup>. It is also behind the Agenda 2030, in particular regarding SDGs 7 and 14. Finally, is also being supported by the EU. It is essential to bear in mind that blue growth is one of the main pillars of the EU's Integrated Maritime Policy (IMP) since 2012. In this sphere, the EU has carried out a strategic assessment of the potential for cooperation in the context of Blue Growth in the various sea basins concerned and has sponsored a series of studies, through DG MARE, to analyse its blue growth potential, examining in detail each of the different development models of its maritime industries, with the aim of drafting specific plans for the future. Another highlight is the Communication on *Blue Energy: Action needed to deliver on the potential of ocean energy in European seas and oceans by 2020 and beyond*, adopted in 2014<sup>66</sup>. It includes, in addition to an overview of the current situation and the main opportunities and threats remaining, an "Action Plan for Ocean Energy" that envisages a two-step approach: a first phase (2014-16) that includes the setting up of an Ocean Energy Forum to bring stakeholders together in order to develop a shared understanding of the main problems and devise workable solutions, as well as the development of an Ocean Energy Strategic Roadmap; and a second phase (2017-2020) that contemplates the possibility of developing a European Industrial Initiative based on the outcomes of the first stage<sup>67</sup>.

Although it is true that certain problems or challenges can always be mentioned, particularly in the economic and environmental spheres<sup>68</sup>, the overall balance is nevertheless clearly favourable, since the benefits of sustainable development from all angles are self-evident (job creation, stimulus to the economy, improved access to energy, energy security, reduction of emissions, climate change mitigation, zero risk of hydrocarbon spills and a reduction in the probability of hazardous accidents, to name but a few). Nonetheless, the existing regulatory framework has many gaps<sup>69</sup>.

<sup>64</sup> UN Doc. A/67/79, pp. 4 ff. See also M. Abad Castelos, "Marine Renewable Energies: Opportunities, Law, and Management", 45 *Ocean Development & International Law* (2014), pp. 221-237; at p. 232.

<sup>65</sup> See, for example, 25 *Earth Negotiations Bulletin* (Number 88, 4 June 2012), at p. 5; and *Report on the work of the United Nations Open-ended Informal Consultative Process on Oceans and the Law of the Sea at its thirteenth meeting*, Doc. A/67/120, 2 July 2012.

<sup>66</sup> [COM \(2014\) 8 final](#), 20 January 2014.

<sup>67</sup> Particularly at pp. 5-9. A few months later, in its Communication *Innovation in the Blue Economy: realising the potential of our seas and oceans for jobs and growth*, also dated 2014, the Commission highlights, amongst other aspects, the need to increase knowledge of our seas in order to promote growth in the blue economy; [COM \(2014\) 254 final](#), 8 May 2014.

<sup>68</sup> It must be acknowledged that issues can also rise in the social sphere, for example a rejection of the more visible kinds of technology in certain surroundings; see S. Kerr, J. Colton & G. Wright, "Rights and ownership in sea country: implications of marine renewable energy for indigenous and local communities", 52 *Marine Policy* (2015), at pp. 108-115. Above all, however, the main challenges are to be found in the economic sphere, due to the huge costs involved and the massive investments needed, and in the environmental sphere, resulting from other possible negative impacts; see G. Wright, "Strengthening the role of science in marine governance through environmental impact assessment: a case study of the marine renewable energy industry", 99 *Ocean & Coastal Management* (2014), pp. 23-30. Nevertheless, further research is needed to determine the scope of certain potential problems (e.g. the impact of certain devices on marine fauna and the possible adverse impact of tidal barrages).

<sup>69</sup> E. J. Martínez Pérez, "The environmental Legal Framework of the Development of Blue Energy in Europe", *The Future of the Law of the Sea. Bridging gaps between National, Individual and Common Interests* (G. Andreone Editor, Springer, 2017), pp. 127-144, at p. 142.

## (2) Spanish practice and the law

Without prejudice to the above, however, it should be realised that it will never be possible to obtain all of the various kinds of renewable energy in all possible surroundings. We have seen how some kinds of marine energy are dependent on certain particular physical characteristics such as temperature or the existence of currents, amongst other<sup>70</sup>. The marine renewable energies best suited to Spain's geography are those generated by wind, waves and currents. This notwithstanding, no offshore wind farms have been built in Spain to date<sup>71</sup>. In the case of energy generated by waves and currents, a number of R&D projects are currently under way along the north coast of Spain, especially in waters off the coast of Bilbao<sup>72</sup>.

The starting point for Spanish legislation in this sphere is once again to be found in the Spanish Constitution, which in Article 149.1.22<sup>a</sup> gives the State, rather than the Autonomous Regions, exclusive competence over “legislation, regulation and concession of hydraulic resources and development when the waters flow through more than one Autonomous Region, and authorisation for hydro-electrical installations when their development affects another Community or when energy transport goes beyond its territorial area”. In consonance with the foregoing, Royal Decree 661/2007, 25 May, which regulates electricity production under the special regime, states that administrative authorisation for the construction, operation, substantial modification, transmission and closing down of facilities “located out to sea” is the competence of the Central State Government, after prior consultation with the relevant Autonomous Regions in each case, and without prejudice to the competences held by other ministerial departments<sup>73</sup>. The same year also saw the coming into force of Royal Decree 1028/2007, 20 July, establishing the administrative procedure for filing requests for authorisation of electricity generating facilities in territorial waters<sup>74</sup>, subsequently partially modified by Royal Decree 1485/2012, 29 October<sup>75</sup> and Royal Decree 1074/2015, 27 November<sup>76</sup>. Wind technology lies at the heart of Royal Decree 1028/2007, whose principal procedure is devoted to this type of renewable energy. Nevertheless, the regulation contemplates a simplified procedure for constructing and enlarging renewable energy production facilities located in territorial waters constituted by “marine energy generation technologies (...) other than wind power”<sup>77</sup>. It should also be noted that although its wording would seem to indicate that this instrument is only applicable to

<sup>70</sup> See M. Abad Castelos, “The Black Sea and Blue Energy: Challenges, Opportunities and the Role of the EU”, *The Future of the Law of the Sea. Bridging gaps between National, Individual and Common Interests* (G. Andreone Editor, Springer, 2017), pp. 145-161.

<sup>71</sup> See the government's Registry of Electrical Energy Production Facilities held by the Ministry of Energy, Tourism and the Digital Agenda, available [here](#).

<sup>72</sup> See more information [here](#). Figures for renewable energies in terms of both consumed output and generation infrastructure are still low in Spain. With regard to the former, at 31 December 2015 renewable energy accounted for 13.9% of total power consumption (with wind energy, mainly land-based, contributing 3.4%), whilst in the case of the latter it represents as much as 34.6% (of which wind energy is responsible for 17.6%); Ministerio de Industria Energía y Turismo, *supra* n. 47, at pp. 186 *ff*.

<sup>73</sup> Royal Decree, 25 May 2007; [BOENo.126](#), 26 May 2007 (art. 4(2)(b)).

<sup>74</sup> Royal Decree, 20 July 2007; [BOENo.183](#), 1 August 2007.

<sup>75</sup> [BOE No. 269](#), 8 November 2012.

<sup>76</sup> [BOE No. 290](#), 4 December 2015.

<sup>77</sup> Art. 32.

facilities located in territorial waters, in reality it also contemplates the use of the procedure it regulates to “wind power generation facilities intended to be located in the adjacent area or in the exclusive economic zone”<sup>78</sup>. Nevertheless, the bulk of the general procedure can be divided into two main stages: firstly, the initial granting of a so-called “zone reservation”, by means of the “marine wind power area definition procedure”<sup>79</sup>, and secondly, the processing of the application for authorisation of the facilities concerned<sup>80</sup>. Each of these two stages is accompanied by its own environmental impact assessment<sup>81</sup>.

The regime contemplated by Royal Decree 1028/2007, although in general terms deserving of a positive appraisal, is not wholly free from reproach from the standpoint of international law. In this regard, criticism can be levelled at the fact that the scope of the application of environmental impact assessments it contemplates is restricted to the national sphere, since it is subject to Legislative Decree 1302/1986, of 28 June, on the assessment of environmental impact and its secondary legislation. This is in breach of a rule of international law that contemplates the requirement “to undertake an environmental impact assessment where there is a risk that the proposed industrial activity may have a significant adverse impact in a transboundary context, in particular, on a shared resource”<sup>82</sup>. In this respect the Law on Environmental Assessment 21/2013 makes no mention either of this matter amongst the principles of environmental assessment applicable to new projects<sup>83</sup>.

Another target for criticism is that according to the current domestic legislation in force, Royal Decree 1028/2007, there has to be an initial competitive procedure in order to analyse and select the best project. As has quite rightly been put forward by scholars of administrative law doctrine, it would be necessary to “postulate the realization, the programmatic nature of sector development plans within the overall strategic plan for the management of the seas”. This would enable the government to predetermine, “in the light of all available information, the location of wind farms, thereby avoiding the opportunism of the competitors and the unwarranted lamentable speculation over facilities occupying a location in the public domain or *res communis* and using a resource, the wind, which is also non-tradable”<sup>84</sup>. Indeed, this is the methodology favoured by other European countries (the United Kingdom, Germany or France, amongst others), which predetermine the areas considered

<sup>78</sup> By virtue of Supplementary Provision Number Five.

<sup>79</sup> Art. 9 ff.

<sup>80</sup> Art. 24 ff.

<sup>81</sup> In addition to the text of the said Royal Decree (arts. 23 & 28), also see I. González Ríos, *Régimen jurídico administrativo de las energías renovables y de la eficiencia energética* (Thomson Reuters-Aranzadi, Navarra, 2011).

<sup>82</sup> Recent international jurisprudence has firmly established this idea, in particular by the International Court of Justice in 2010 on settling the dispute between Argentina and Uruguay regarding the installation of pulp mills on the River Uruguay; *Case concerning Pulp Mills on the River Uruguay* (Argentina v. Uruguay; 2010 ICJ, at par. 204-205).

<sup>83</sup> It only refers to “cooperation and coordination between Central State Government and Autonomous Regions” (art. 2(f)).

<sup>84</sup> B. Soro Mateo, “La autorización de parques eólicos marinos en España”, *Revista Catalana de Dret Ambiental* (2011, Issue 2), pp. 1-43; at p. 39. The author goes on to point out that “a competitive procedure is justifiable in the sphere of public procurement, as well as in relation to the promotion of policies or the convening of benefits, or in regard to the allocation of scarce goods, but not, as in the case of the current object of study, Royal Decree 1028/2007, to favour competition over a project whose initiative is perfectly defined and proceeds from the private sector. This (...) only discourages entrepreneurship in this field”; *ibid.*

appropriate for installing offshore wind farms. As the Spanish Maritime Cluster has highlighted, to do the opposite, might, “as has indeed happened”, lead to various bidders applying for areas in which to install their wind farms “that overlap with each other”<sup>85</sup>.

A further point to be taken into account is the adoption of the Law 2/2011, 4 March, on Sustainable Economy<sup>86</sup> within the framework of the *Strategy for a Sustainable Economy*, passed by the Cabinet in late 2009 and which contemplated a reform package based on a series of strategic options, one of these being the promotion of activities related to clean energy and energy saving. Part III of the Act contains provisions relating to various areas of environmental stability, a platform for introducing a number of overarching reforms in the sectors concerned, that of the “energy model” amongst them. The chapter devoted to the sustainability of the energy model includes the major principles applicable to the field, namely guaranteed security of supply, economic efficiency and environmental protection. It also covers domestic targets for 2020 regarding energy saving, energy efficiency and the use of renewable energies, in line with those laid down in the EU’s 20-20-20 Directive<sup>87</sup>, although it makes no specific mention of marine renewable energies<sup>88</sup>.

The Law 21/2013 on Environmental Assessment, which transposes the 2011 EU Directive on the assessment of the effects of certain public and private projects on the environment<sup>89</sup>, includes activities relating to the “exploitation or use of natural resources or of the soil and subsoil and of marine waters”<sup>90</sup> and subjects them to a series of environmental assessment principles including “environmental protection”, “precaution”, “preventive and precautionary action”, “proportionality”, “public participation” and “sustainable development”<sup>91</sup>.

Similarly, and also in response to the challenge laid down by the EU’s 20-20-20 Directive to ensure that at least 20% of Spain’s gross final energy consumption is provided by renewable sources, the Spanish 2011-2020 *Renewable Energy Plan* for the first time devotes a specific section to marine energies<sup>92</sup>, starting by acknowledging that “the seas and oceans contain the world’s largest solar energy collector and storage system, making them an enormous potential source of energy”<sup>93</sup>. The Plan also points out that the initial consortia formed by SMEs and Universities have opened the way for greater involvement on the part of large private corporations<sup>94</sup>. It is also relevant to add, in this regard, that the Spanish Maritime Cluster (CME), which brings together “all Spain’s domestic industries, services and economic activities connected with the sea”<sup>95</sup>, has stressed the convenience of recognising the positive effect that the development of a new maritime industry linked to renewable energies

<sup>85</sup> Clúster Marítimo Español, *Oportunidades de negocio de la energía eólica marina en el sector marítimo español* (Madrid, 2011), at 63.

<sup>86</sup> [BOE No. 55](#), 5 March 2011.

<sup>87</sup> [OJEU L140/16](#), 05 June 2009.

<sup>88</sup> See Arts. 77-80.

<sup>89</sup> *Supra* n. 35.

<sup>90</sup> Art. 5(3)(b).

<sup>91</sup> Art. 2.

<sup>92</sup> Section 4(4), at p. 191 ff.

<sup>93</sup> IDAE, [Plan de Energías Renovables 2011-20](#) (Madrid, 2011), at p. 191.

<sup>94</sup> *Ibid*, p. 193.

<sup>95</sup> See more information [here](#).

could have on certain disadvantaged areas of the country, citing Ferrol, the Bay of Cadiz or Campo de Gibraltar as examples, amongst others<sup>96</sup>.

A raft of Spanish companies of all sizes and degrees of diversification of their activity are currently involved in marine energy projects. Some of these are ‘traditional’ energy companies that have started to embark on renewable energy projects (e.g. Iberdrola, Repsol or Cepsa), whilst others focus exclusively on producing clean energy or simply manufacturing products for the sector (e.g. Acciona, Renovalia, Tecnalia or Ingeteam). It must be said, however, that some of these companies have found themselves in serious financial difficulties (one being Gamesa, which was taken over by Siemens Wind Power, giving birth to a major player in the wind energy sector). At the same time, we also encounter the paradox of certain Spanish companies being involved in renewable energy projects abroad, but not at home.

To summarise, it is apparent that Spain faces a number of specific barriers of different kinds that not only relate to its physical geography<sup>97</sup>, or are of an economic, social and environmental nature<sup>98</sup>, but also derive from its administrative structure. These obstacles are the reason for the cancellation of many renewable energy projects, particularly those in the field of marine wind energy, after first being submitted. Above all, serious impediments have been identified in the granting of permits, arising from the lack of coordination between the different competent authorities concerned, leading to extremely long delays<sup>99</sup>. To all of these we must add a series of legal hurdles, amongst them recent decisions leading to the introduction of damaging regulatory measures with retroactive effect that reflect a lack of political will to come down firmly on the side of renewable energy and have done serious harm to the sector in Spain<sup>100</sup>. What needs to be done is precisely the opposite, namely to consider specific measures that will promote the use of marine renewable energies.

#### (D) CONCLUSIONS

Both the sea and its non-living resources can be considered strategic assets for Spain. Their legal regulation involves a number of important sectors of the international legal system, the most

<sup>96</sup> Clúster Marítimo Español, *supra* n. 86, at p. 20.

<sup>97</sup> Spain’s continental shelf is very deep in many places, making it difficult to anchor fixed wind turbines to the seabed. In cases such as these floating turbines are a better alternative.

<sup>98</sup> See E. J., Martínez Pérez, *supra* n. 70, at pp. 138 ff; also *id.* “El marco jurídico internacional y comunitario con incidencia en la instalación de parques eólicos”, 49 *Revista de Estudios Europeos* (July-December 2008), pp. 75-96 and V. L. Gutiérrez Castillo and J. J. García Blesa, “The environmental protection regimes governing marine renewable energies in the EU and their implementation in the marine and coastal areas of the South of Spain”, 17 *Spanish Yearbook of International Law* (2011-12).

<sup>99</sup> See A. Colmenar-Santos, J. Perera-Pérez and D. Borge-Díez, “Offshore wind energy: A review of the current status, challenges and future development in Spain”, 64 *Renewable and Sustainable Energy Reviews* (2016), pp. 1-18; at pp. 6ff.

<sup>100</sup> See Royal Decree-Law 1/2012, 27 January, which suspended, with retroactive effect, certain economic incentives for renewable energies in Spain (whereby the pre-allocation of remuneration procedures for new facilities producing electricity from cogeneration, renewable energy resources and waste is suspended; [BOE No. 24](#), 28 January 2012). This was followed by Royal Decree-Laws 2/2013, on urgent measures in the electrical system and financial sector ([BOE No. 29](#), 2 February 2013) and 9/2013 whereby urgent measures to ensure the financial stability of the electrical sector are adopted ([BOE No. 167](#), 13 July 2013). See also Law 24/2013 on the Electrical Sector ([BOE No. 310](#), 27 December 2013).

significant being those related to the law of the sea and energy law, as well as the regulations governing the transport and transmission of energy and the protection of the marine environment. Also to be taken into account within this sphere are the principles of sustainable development and precaution, given that in addition to enjoying a place in EU law, they undeniably extend not only to the international regulatory framework concerned with this issue but also to that of Spanish domestic law.

A further point to emphasise is the vital role played by companies in the exploitation of non-living marine energy resources, both fossil and renewable. More specific planning and safeguarding of their activity than is at present the case needs to be integrated into Spanish laws and regulations.

Improvements can also be made to the Spanish legislation concerning hydrocarbons. In this regard, despite having somewhat belatedly transposed the 2013 EU Safety of Offshore Oil and Gas Operations Directive, Spain still has other potential actions ahead of it, with the desirability of ratifying the Madrid Protocol deserving particular mention.

In the specific sphere of marine renewable energies, their commercial exploitation should cease to be merely an ideal and transform itself into a reality for Spain in the short to medium term. The main conclusion of this study is thus that a whole raft of possibilities within the field of renewable energies would open up for Spain if the competent political authorities decided for once and for all to follow the path of sustainability signposted by domestic and international instruments (of varying legal scope), with a commitment to making the most of the enormous potential offered by the country's geographical location. This challenge has to date not been faced in a consistent, determined and efficient manner, and it would appear that now is the moment to do so. However, for this to happen a series of necessary conditions must prevail, and in this regard the public authorities will have to plan ahead strategically. Action needs to be taken on a series of interconnected fronts, namely greater investment in RDI, a commitment to paving the way for companies as far as licences and incentives are concerned, and finally, the undertaking of initiatives that will guarantee the existence of a transparent, stable, appropriate and stimulating legal framework.