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Offshore Renewable Energy Planning in French Law: towards an integrated process?

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Abstract. The production potential of offshore renewable energy meets the objectives of energy and climate policy at international and European level. Under French law, the necessary planning for the development of the offshore renewable energies is carried out within the framework of energy law. This situation, which was not entirely satisfactory in terms of participation and respect for the marine environment, has led to legal developments. In particular, the planning method chosen should be improved through the implementation of MSP. The purpose of this article is to present the planning of offshore renewable energies under French law and to analyze its relevance.

1. Introduction

Offshore renewable energies (ORE) are part of the solution to achieve the energy transition in the face of climate change. They are also an emerging activity at sea that must find its place in maritime areas among other human activities while respecting the marine environment. European Union law does not define offshore renewable energies, but gives a list of renewable energies [1]. While French law, still without giving a definition, refers in several texts to “renewable energies at sea”, understood as installed in the maritime space [2]. These are both marine energy, such as current, wave, ocean thermal or salinity gradient energy, or installed and floating offshore wind turbines. The development of ORE requires programming or planning in a broad sense and more particularly spatial planning to make location choices. Again, it is difficult to have a precise definition of planning in law [3]. Nevertheless, in regards to environmental issues, a planning process, whether or not it has a spatial dimension, must be based on an analysis of the state of initial play, contain objectives or orientations based on a prospective approach and follow a concerted process [4].

In accordance with international law and European law, the development of ORE depends on public policies in the fields of energy, environment and maritime affairs [5]. The complicated rules organizing this development are the result of this plurality of relevant public policies and legal sources. There are several other reasons for the complexity of ORE development. One is due to the interaction between land and sea, for example with regard to electricity transport or impacts on coastal landscapes. Another reason is the variety and number of administrative authorizations and their relationship to several planning documents. This issue of the diversity of permits and licenses can be found in most European countries in various forms [6]. Furthermore, different authorities, central and local, are involved in the decision process. Since 2010, successive French governments have been seeking to simplify the legal framework for the ORE development.



The development of these energies requires answering public policy questions: what type of energy, in what quantity, where and how to install them? The legal framework for answering these questions varies according to the different States concerned [6].

In France, energy law is the most important legal source for the development of ORE, since it organizes the programming of these energies, competition procedures and need a spatial planning, the latter which we will call “sectorial planning”. Under French law, the rules governing the production of renewable energy are contained in the Energy Code and have been significantly amended by the Energy Transition Act of 17 August 2015 [7]. To this end, France follows European Union law. The Treaty on the Functioning of the European Union provides that the “Union policy of energy shall aim to (a) ensure the functioning of the energy market; (b) ensure security of energy supply in the Union; (c) promote energy efficiency and energy saving and the development of new and renewable forms of energy; and (d) promote the interconnection of energy networks”. Since 2009, European Union law has set renewable energy production targets for each Member State [1]. The target is 23% renewable energy in energy consumption and transport in 2020 for France. With the new 2018 Directive: “Member States shall collectively ensure that the share of energy from renewable sources in the Union’s gross final consumption of energy in 2030 is at least 32 %” [8]. States must establish integrated national energy and climate plans in order to achieve their objectives. European Union Law also provides for how States can financially support renewable energy projects and organize competitive tendering procedures [8] [9].

Environmental law is another important source for the development of renewable energy at sea. In addition to the marine environmental law referred to below, International and European Union law contains rules, in particular on environmental assessment [10] and nature conservation, with the “Birds” and “Habitats” directives [11], which must be implemented by the Member States. In domestic law, the Environmental Code contains several authorization regimes, such as the one concerning water, and has unified all these regimes through a single environmental authorization procedure (art L 181-1 et seq. Environmental Code). The Environmental Code also contains two sets of essential rules concerning the environmental assessment of projects or plans (art L 122-1 et seq. Environmental Code) and public participation (art L 121-1-A et seq. and L 123-1-A et seq. Environmental Code).

Particular attention must be paid to the law of the sea and the coastline. European Union and French law in this area refers to the 1982 United Nations Convention of the Law of the Sea [12]. The Convention sets out the rights and obligations of States in the various maritime areas and the conditions for the protection and preservation of the marine environment (Part XII). Then, the organization of human activities at sea is nowadays guided by the concept of integrated coastal zone management (ICZM), through soft law instruments [13], and above all by that of marine spatial planning (MSP) [14]. Some of these concepts are reflected in European legislation. The European Union has implemented an integrated maritime policy [15] which has resulted in the Marine Strategy Framework Directive (MSFD) adopted in 2008 [16] and Maritime Spatial Planning Directive (MSPD) adopted in 2014 [17]. During the 2000s, France adopted new regulations for State action at sea [18]. It has also formalized its maritime policy, thus promoting the planning approach [19]. But the legislative framework for strategic management of the sea and coastline has come with environmental policy following a broad national forum on the issue in 2010 [20]. Since then, the legislation on Integrated Management of the Sea and the Coastline has been included in the Environment Code (art L 219-1 et seq. Environmental Code). Subsequently, this strategic framework for the sea and coastline had to be adapted to the European legislation on maritime spatial planning of 2014.

The aim of this article is to present the complexity and analyze the relevance of renewable energy planning under French law in relation to public policy objectives in the fields of energy, climate and the environment. More specifically, it is a matter of explaining the coherence between sectorial planning of OREs and maritime spatial planning, the reality and usefulness of public participation, the challenge of taking the environment into account and the effectiveness of the planning system in achieving the development objectives of OREs. For this purpose, first, it is important to situate the

issue of planning in the legislative context of OREs (section 2). It follows from this that sectorial planning of OREs depends on energy law. Despite improvements, for example in terms of participation, this model still has shortcomings (section 3). Finally, maritime spatial planning is developing in France as in the rest of Europe and constitutes a means of integration for offshore renewable energy planning (section 4).

2. Planning within the legal framework of the offshore renewable energy development process

2.1 *Presentation of the legal framework for offshore renewable energy projects*

The planning process must be considered in light of the administrative and legislative context of ORE development process [21]. Offshore renewable energy projects are subject to a difficult and varied administrative process due to their location in the maritime area and the question of connection to the electricity transmission grid. First, the applicable legal regimes differ depending on whether the location of production facilities takes place in the territorial sea or in the exclusive economic zone. In the future, floating wind turbine projects will mainly be installed in the exclusive economic zone, which will make their administrative route partly simpler. Secondly, installations connecting to the electricity transmission network are to be distinguished from those for production and must obtain authorizations for both connection cables located at sea and for cables and the delivery station located on land. As we have pointed out, an offshore renewable energy project requires several categories of administrative authorization under different legislation such as those concerning energy, the ownership of public persons (in the territorial sea), the environment, the sea (in the exclusive economic zone - EEZ), cultural heritage, civil aviation or even, with regard to connection, urban planning or forestry.

To map the planning process of an ORE project, it is first possible to present a simplified succession of steps in the administrative process and then to specify what concerns planning in this process. The first step is the programming document provided for in the energy code, which sets out the objectives for the development of OREs. The second step is to identify suitable areas for the implementation of a competition procedure. The third step is the launch of the competitive bidding procedure for which the Minister decides on the selected areas. After the results of this procedure, the fourth step consists for the winner of a project in preparing and submitting all the applications for administrative authorizations, which vary according to the situation in the territorial sea or in the exclusive economic zone. At this stage, the project developer must provide an environmental impact assessment and a public inquiry is carried out. After obtaining the authorizations, the fifth step corresponds to the purging of legal disputes. The sixth step is the construction in compliance with the authorizations and regulations. The planning process involves the first three steps: programming, sectorial planning (i.e. defining suitable areas) and the selection of areas by the Minister in the competitive bidding process. This scheme may be more complex if other planning instruments are taken into account (see section 4). Indeed, the importance of the new maritime spatial planning must be stressed. Similarly, other planning instruments are applicable on the coast and may concern ORE projects.

2.2 *A constantly evolving legal framework*

The public authorities have repeatedly sought to simplify the administrative process for offshore renewable energy projects. We can present this evolution in a chronological way. In 2010, the first legislative simplification consisted in exempting these projects from the legislation on urban planning authorizations and the legislation on classified installations for the protection of the environment to which onshore wind turbines are subject [22]. In 2016, in the field of energy law the competitive bidding procedures were enriched by the creation of the competitive dialogue [23]. This procedure makes it possible to select candidates who will discuss with the Minister in charge of energy the content of the specifications before the Ministry selects one of the bids. Financial support mechanisms for renewable energy have also evolved. The selected producers will be able to benefit either from a purchase obligation at the price resulting from the competitive tendering procedure for their electricity

or from an additional remuneration [24]. Also in 2016, the government adopted a decree simplifying administrative litigation concerning ORE projects by appointing a single Court of Appeal with first and last instance jurisdiction for all appeals against an administrative decision in ORE matters [2]. Without specific consideration for renewable energy, the 2016 Biodiversity Recovering Act created the environmental authorization regime, which includes all authorizations provided for in the Environmental Code, such as authorizations in the field of water or protected species, which apply to OREs [25]. Another Act of 30 December 2017 modifies the conditions for making the electrical connection [26]. The electricity transmission system operator (RTE) responsible for carrying out the work will now also have to bear the costs. ORE project leaders no longer have to integrate the cost of connection into the electricity price. Finally, in 2018, the ESSOC Act brings a set of changes [27]. It allows permits to be modified after their issuance, within the limits defined by the law, for offshore renewable energy installation projects. The Act also provides that all or part of the environmental impact assessment may be carried out and made available to project owners by the Minister in charge of energy. This type of authorization is referred to in practice as an “envelope permit”. Thus today, for installations in the territorial sea and without taking into account the question of connection, the project leader chosen by the Minister of Energy after a competitive bidding procedure must mainly obtain the environmental authorization and a concession for the use of public domain. While a project in the exclusive economic zone will require a single authorization under the 2016 Order concerning [28]. In the future, floating wind projects should be facilitated by this set of measures as they will most often be installed in the EEZ further offshore than installed wind turbine.

3. Sectorial planning

3.1 *The need for planning from energy law*

The strategic framework for the development of ORE is constituted by French energy law, specifically renewable energy and electricity law, in compliance with European energy and climate law and international climate law. The national strategy is defined in three stages. The first step is to define objectives directly in the law. The 2015 Energy Transition Act specifically provided for a 40% reduction in greenhouse gas emissions between 1990 and 2030, a fourfold reduction in greenhouse gas emissions between 1990 and 2050 and an increase in the share of renewable energy to 23% of gross final energy consumption in 2020 and 32% in 2030 (art L 100-4 Energy Code) [9]. The second step consists in defining the Bas-Carbone National Strategy containing carbon budgets for a period of five years as provided for by the 2015 law (art L 222-1 B Environmental Code). The third step has a more operational focus, the law also provided for the establishment of a Multi Annual Energy Plan (MAEP – *programmation pluriannuelle de l'énergie*) containing quantitative objectives, in particular for electricity (art L 141-1 et seq. Energy Code). The first MAEP was adopted in 2016 by decree [29]. A revision has been in preparation since 2018 and is expected in 2019. This document is particularly important because competitive tenders or dialogues can be launched according to its objectives. As early as 2009, a document prefiguring the Multi Annual Energy Plan for electricity only set an initial target of 6,000 MW by 2020 for offshore wind energy. The 2016 MAEP set a target for offshore wind energy of 3000 MW for 2023 and 500 to 6000 MW more beyond that. The revision of the MAEP for 2019 is more realistic and precise by programming 2400 MW for 2023 and 4700 to 5200 for 2028 [30]. The document also indicates a timetable by specifying the years according to the installed or floating nature of the wind farms. For example, we are expecting a call for tenders for a 250 MW floating wind turbine project in Brittany for 2021 and another in the Mediterranean for 2022 with ceiling prices. All of this programming has been established according to the technical potential for wind energy. Which is estimated at 90 GW for the installed wind turbine and 155 GW for the floating wind turbine, but due to limitations related to usage competition, the potential is currently estimated at 16 GW for installed and 33 GW for the floating. Concerning tidal energy, “France has an exploitable technical potential, without taking into account the constraints of use, of 2 to 3GW maximum”, knowing that the Rance tidal power plant has had a capacity of 240 MW since 1966. However, while

the 2016 MAEP forecast between 200 and 2000 MW of marine energy, the 2019 document does not contain any details on this subject.

After the programming choices are made based on the wind potential, the public authorities can also decide on the location of the wind farms for better integration and feasibility. The 2009 document foreshadowing the MAEP emphasized the need for localization by providing for a “forum for consultation and planning by sea front” that we call “sectorial planning”.

3.2 *The sectorial planning exercises*

In 2009, the Minister for Energy simply wrote to the prefects of the regions concerned in collaboration with the maritime prefects to identify suitable areas for offshore wind energy with a view to launching a call for tenders [31]. Subsequently, the Minister has repeatedly requested the organization of other so-called planning exercises either for a procedure for competitive tendering of offshore wind energy or for calls for expressions of interest concerning demonstrators of another form of offshore energy such as floating wind energy or current energy.

The method used aimed to identify suitable areas according to their technical and economic potential and to specify the various spatial constraints linked to human activities and the environment [32]. The aim was therefore to define the areas of least constraint that would be generally dimensioned for future calls for tenders. In a geographical information system, a multi-criteria grid is developed taking into account the issues according to their level of constraints (moderate, strong or excluded) [33]. The data used are provided by State services or public institutions, such as those specializing in development (*CEREMA*), marine sciences (*SHOM*) or biodiversity (French Biodiversity Agency - *Agence française pour la biodiversité*). The most important data on production potential are bathymetry, wind, sea soil and subsoil, swell, currents, etc. The data on the issues identified have been grouped into four broad categories. These include cultural heritage, environment and landscape issues, navigation and safety issues, socio-economic issues, and marine and air defence issues. The exercises were organized under the authority of the prefects concerned by the Interregional Directorates for the Sea (*DIRM*), an administration specializing in maritime issues. Over time, successive sectorial planning exercises have improved. From 2014 (3rd exercise), the presentation of the sensitivity grids has evolved. The conditions for consultation have been slightly improved (see next subsection). Above all, the electricity transmission system operator (RTE) responsible for the connection work was involved in the sectorial planning work. Connection conditions have therefore been included in the criteria for defining offshore wind energy suitable areas.

Environmental impact assessment (EIA) is a crucial issue for the success of developments at sea or on land and of course for the protection of the environment. Since 2001, European legislation has organized an environmental assessment of plans and programs with an impact on the environment, which is implemented by the Member States [34]. Thus, French regulations require an environmental assessment of plans and programs for a large number of planning documents, for example MAEP. However, it does not provide for this procedure for offshore renewable energy planning exercises, which is all in all normal since this sectorial planning is not a procedure provided for by the regulations but an administrative practice organized by the Minister for Energy in order to put projects out to competition. Thus, there is no environmental impact assessment when defining all the ORE zones that then frame projects development. The compliance of the French situation with the 2001 “plans and programs” Directive may be worth discussing. It should be noted that the MAEP document is subject to environmental assessment, but it only contains general information without the location of activities. Similarly, documents implementing maritime spatial planning, as Sea basin strategic documents, are also subject to environmental assessment (see 4.2).

3.3 *Public participation and disputes about sectorial planning*

We will present public participation as it existed until 2018, with recent developments presented in the following subsection. International and European law on public participation in environmental matters is quite dense [35]. France has had legislation to this since the 1980s, but has constantly adapted it to

changes in EU law and sometimes with delay [36]. Without taking into account procedures specific to certain documents or administrative decisions, procedures to inform and involve the public before adopting a plan, program or project are mainly public debate, prior consultation and public inquiry. The purpose of public debate is to involve the public in the process of preparing development projects or facilities of national interest [...] when they have high socio-economic stakes or have significant impacts on the environment or spatial planning (art L 121-1 Environmental Code). Prior consultation can be carried out when the project does not require a public debate. The purpose of public inquiry is to ensure that the public is informed and involved and that the interests of third parties are taken into account when decisions are taken that may affect the environment (art L 123-1 Environmental Code). The public inquiry therefore takes place during the administrative authorization procedures for ORE projects. In terms of ORE planning, as early as 2009 the government stressed the importance of broad public participation, but did not use the public debate procedure for this purpose. As this planning is not governed by regulations, the regional prefects and maritime prefects have chosen specific methods of consultation with the holding of meetings of stakeholders, in particular with representatives of fishermen, as well as the presentation of the planning work to the Maritime Council of the sea (an inter-regional governance body specific to the sea). In reality, the sectorial planning exercises have not been sufficiently publicized beyond maritime professionals and certain local authorities. To take just one example of the inadequacy of the consultation process, it can be noted that owners of coastal residences in municipalities bordering offshore wind projects have generally not been informed at this stage. However, these owners have participated in appeals against the administrative authorizations of wind farms. Before 2018, a public debate procedure was still organized for each wind farm project after the outcome of the competitive tendering procedures and therefore after the Minister had chosen the sites on the basis of sectorial planning. At that point in the process, this procedure was therefore largely unnecessary.

The results of the planning exercises carried out by the administration are not acts that can be challenged before an administrative court. Moreover, sectorial planning exercises are not among the questionable decisions listed by the decree on offshore renewable energy litigation [2]. Nevertheless, the choice of offshore wind farms has been challenged by many stakeholders, including local environmental associations, associations of second home owners and representative bodies of fishermen. The challenges were thus brought against ministerial decisions to designate the winners following the tendering procedures as well as against decisions to authorize projects under environmental legislation and public domain law [37]. As regards appeals against decisions relating to competitive tendering procedures, the Administrative Court of Appeal did not have to rule on the question of the choice of sites because it considered that the local associations requesting protection of the environment or residents had no interest in acting against decisions concerning competitive tendering procedures. With regard to appeals against administrative authorizations, the Administrative Court of Appeal dismissed applications for cancellation based on the choice of sites on the grounds that the choice was made before the administrative authorization stage [38]. In a way, in this system all possibilities of legal action to contest the choice of sites are closed.

3.4 *The new organization of sectorial planning*

The government initiated the ESSOC law of 11 August 2018, which significantly modified the legal framework for offshore renewable energies [27]. One of the decisive advances in the law does not concern planning. The aim is to provide for a mechanism for renegotiating the remuneration of designated producers in the context of the first calls for tenders. In 2018, the six projects have not yet been installed, while construction and operating costs have since decreased significantly. This moment of truth made it possible to lower the feed-in tariff for all six offshore wind projects awarded in 2011 and 2013. With regard to sectorial planning (i.e. definition of suitable areas), the Act introduced the following provision into the Environmental Code: “Where the Minister of Energy wishes to launch a competitive bidding procedure[...] for the construction and operation of offshore renewable energy production facilities[...], he shall refer the matter to the National Commission for Public Debate before

launching such procedure, which shall determine, under the conditions provided for in this Section, the procedures for public participation in the decision-making process for launching the competitive bidding procedure. The public is consulted in particular on the choice of the location of the potential area or areas for the installation of the planned installations” (art L 121-8-1 Environmental Code). This provision responds to a strong expectation of the public and the President of the National Commission for Public Debate [39]. Previously, the public debate on an ORE project was organized after the winners of a competition procedure had been selected, therefore necessarily after the choice of sites, and before the applications for authorizations. Now, the public debate must be organized before the launch of the competitive bidding procedure and therefore during sectorial planning since the public must give its opinion on the choice of sites. A decree has been issued to provide two clarifications on the implementation of the procedure [40]. First, “the Minister in charge of energy may involve the regional council territorially concerned in the procedure and preparation of the file submitted for debate or consultation” (art 1 decree n° 2018-1204 of 21/12/2018). This strengthens participation in planning at the regional level. Secondly, “the contracting authority for the connection works [...] is involved in the procedure and preparation of the file submitted for debate or consultation” (art 1 decree n° 2018-1204). These legislative and regulatory developments will significantly improve public information and participation in sectorial planning. However, the legal nature of the preparatory act for this planning is not modified and the Minister retains the power to choose the sites subject to competitive tendering procedures.

4. Marine and coastal instruments in the planning diversity

4.1 *The search for relevant planning instruments applicable to ORE*

Beyond sectorial planning, the decision-making process of an ORE project is part of a set of planning documents. Among these instruments, it is possible to distinguish between those relating to the environment, to urban planning and land development and finally to the sea and the coast. It should be noted that in French law the legal links between administrative authorizations and planning documents can be very diverse in their variety and strength. Indeed, apart from urban planning law, where decisions (permits) must comply with urban planning plans (*Plans locaux d'urbanisme*), a category of plan may concern different types of administrative decisions provided for by different legislation, just as a decision must sometimes be compatible with different categories of plans. In addition to that, a significant difference can be highlighted between documents containing guidelines or objectives and those containing regulations or easements. The first documents with a more strategic purpose must be followed up in the context of a “compatibility” report, which leaves a form of flexibility in the administrative decision. The latter have a stronger legal effect against administrative decisions, which is that of compliance.

It should also be added that planning documents not only have legal links with administrative decisions but also with other planning documents. The legal relationship between two planning documents is most often a “compatibility” link or, less constraining, a “taking into account” link. Thus, there is a kind of “planning system” with several layers of documents, which can make the cake somewhat indigestible.

In general, administrative authorizations for ORE projects are subject to little or no compliance with “terrestrial planning” documents. First, offshore wind projects are located at least 10 km from shore due to an administrative doctrine (i.e. non-regulatory) since 2009 and therefore generally outside the territorial scope of these documents. Secondly, the law has exempted renewable energy projects installed beyond the shoreline from urban planning law authorizations subject to compliance with urban planning documents (art L 421-5 Urban Code). However, some works authorizations or installations that do not form part of the ORE project in the strict sense may have to comply with urban planning documents. This is the case for building permits or other authorizations required for shore-based electrical connection and port infrastructure necessary for the operation of a wind farm.

In the environmental field, there are many planning documents to protect or manage certain areas or interests. These include natural risk management instruments (risk prevention plans, art L 562-1 Environmental Code), water development and management instruments (water management plans, art L 212-1 and L 212-3 Environmental Code), nature and landscape protection instruments, in particular management plans or charters for regional natural parks (art L 333-1 Environmental Code), marine natural parks (art L 334-3 Environmental Code) or national parks (art L 333-1 Environmental Code). Among these different parks, marine natural parks must be seriously considered because of their significant number and the fact that the French Biodiversity Agency has the power to issue an assent (i.e. which must be followed by the administrative authority) when an activity is likely to significantly alter the marine environment of a marine natural park (art L 334-5 Environmental Code). The French Biodiversity Agency then refers to the management plan for the marine natural park.

In the field of land development, without dealing with examples that are too specific, we can mention the regional plans for planning, sustainable development and territorial equality (*SRADDET*, art L 4251-1 CGCT). In 2016, the legislator made this document a master plan integrating various plans at the regional level, including the regional air and energy climate scheme. It remains to be seen whether, once they come into force, these documents will have an impact on ORE development projects in terms of their content and effects. In general, the regions concerned have a policy in favour of offshore renewable energies and seek to support them.

In maritime and coastal matters, planning instruments are logically more relevant for ORE projects. The planning documents can then correspond either to maritime spatial planning (which will be discussed in a future subsection) or to Integrated Coastal Zone Management (ICZM). ICZM is a mode of governance for coastal zones that promotes the consideration of land-sea interactions and whose management is based on the principle of integration while respecting the environment. This approach has been promoted at international and European level [7] [41]. In the Mediterranean Sea, the law is more complete since a protocol on ICZM has been adopted as part of the Barcelona Convention [42]. In 1986, France adopted a Coastal Act to regulate development on the coast and protect its natural character, for example by prohibiting construction in a 100-metre strip along the shoreline or by protecting remarkable sites (art L 121-1 and seq. Urban Code) [43]. The provisions of the Coastal Act must be incorporated into urban planning documents, but as we have seen, these do not apply to ORE projects. Moreover, the direct application of the Coastal Act has been ruled out by case law in the context of disputes over authorizations for offshore wind farms [38]. With regard to connections to the electricity transmission network, the legislator has introduced derogations from the Coastal Act to allow the landing of cables in coastal protected areas (art L 121-17 al. 2 and L 121-25 Urban Code). In 1983, France also developed a planning tool for ICZM with sea development plans (*Schéma de mise en valeur de la mer - SMVM* - art 57, Act n° 83-8 of 7 January 1983). *SMVM* “determine the general vocation of the various areas and in particular the areas affected by industrial and port development, marine aquaculture and leisure activities. They specify the measures for the protection of the marine environment”. “They also determine the purposes of the various sectors of the maritime space and the principles of compatibility applicable to the corresponding uses”. Unfortunately, these instruments, which were binding on urban planning documents, have only been used very rarely and for relatively small areas. A 2005 law attempted to revive these instruments by decentralizing them and leaving it to the municipalities to integrate them into territorial coherence schemes (i.e. higher-level urban planning plans). As a result, decentralized *SMVM* are not expected to have a particular effect on ORE projects. Finally, in addition to planning documents, there are also several zonings to be taken into account for the development of OREs. These are maritime navigation areas, such as traffic separation schemes, aquaculture areas, areas for the extraction of sand and gravel, or of course sites covered by the Birds Directive or Natura 2000 Directive.

4.2. Maritime spatial planning instruments

Marine or maritime spatial planning (the distinction will not be discussed here) has recently emerged as a major issue in the governance of the seas and oceans at the international, regional and national

levels [18] [44]. Designed in particular for the management of marine ecosystems, this instrument was presented as a means to realize ecosystem-based, sea-use management [45]. Gradually, the foundation of the MSP shifted towards supporting and organizing the blue economy [46]. In this context, the European Union adopted the Directive establishing a framework for maritime spatial planning (MSPD) in 2014, which “establishes a framework for maritime spatial planning aimed at promoting the sustainable growth of maritime economies, the sustainable development of marine areas and the sustainable use of marine resources” (art 1 of the Directive) [17]. Article 5.1 on objectives states: “When establishing and implementing maritime spatial planning, Member States shall consider economic, social and environmental aspects to support sustainable development and growth in the maritime sector, applying an ecosystem-based approach, and to promote the coexistence of relevant activities and uses”. MSP is a process by which the authorities “analyze and organise human activities in marine areas”, that results plan or plans. In particular, Members states shall take into account land-sea interactions, environmental, economic and social aspects, as well as safety aspects, other processes, such as integrated coastal management, ensure public and stakeholders participation, organise the use of the best available data and ensure trans-boundary cooperation. As an emerging activity, the development of ORE is one of the strong motivations for implementing maritime spatial planning (recital 22 of the directive). In its Article 5.2, the Directive specifies the sectors and interests that the MSP must pursue: “Through their maritime spatial plans, Member States shall aim to contribute to the sustainable development of energy sectors at sea, of maritime transport, and of the fisheries and aquaculture sectors, and to the preservation, protection and improvement of the environment, including resilience to climate change impacts”.

The Grenelle II Act of 12 July 2010 created the “integrated management of the sea and coastline” comprising two main levels of planning (art L 219-1 et seq. Environmental Code) [22]. At the national level, the National strategy for the sea and coastline (NSSC) constitutes the reference framework for the protection of the environment, for the achievement or maintenance of good ecological status (2008 Marine strategy framework directive-MSFD), for the sustainable use of marine resources and for the integrated and concerted management of activities related to the sea and the coast, with the exception of those whose sole purpose is national defence or security [47]. At the sub-national level, the national strategy is reflected in the four Sea basin strategic documents (SBSD - *documents stratégiques de façade*) for the metropolis and specific documents for overseas. The Sea basin strategic documents also integrate the marine action plans implementing the MSFD. At the same time, the 2010 Act created sea and coastal governance bodies with the National Council for the Sea and Coasts at the national level, which is involved in defining the national strategy, and at the subnational level, the Sea basin maritime councils, which promote the participation of stakeholders in the strategy on the Sea basin. While the Sea basin strategic documents had not yet been adopted, the legislator had to adapt French maritime planning to the 2014 MSPD. Since the Act of 8 august 2016 [25], the function of the Sea basin strategic documents has been to implement maritime spatial planning. They contain four parts: 1) the situation of the existing situation within the perimeter of the seafront; 2) the definition of strategic objectives and associated indicators; 3) the modalities for evaluating the implementation of the strategic document; 4) an action plan (art R 219-1-7 Environmental Code). The objectives provided for in Part 2) are accompanied by the definition and justification of the conditions for the spatial and temporal coexistence of activities and uses, with a mapping representation called a vocation map. The document is drawn up and adopted by the coordinating prefects in accordance with a fairly satisfactory participatory procedure with stakeholders and public consultation. The first two parts of the document have been completed in 2018 while the action plan is expected in 2021.

Whether under European or national law, the question of how strategic documents take into account OREs is crucial. First of all, the Sea basin strategic documents ensure coordination with several other planning documents in the fields of land use planning, water management and energy. Thus, the SBSBs refer to the objectives of the Multi Annual Energy Plan. However, when the environmental authority gave its opinion on the SBSB, it considered that these documents could have taken better account of certain terrestrial documents [48]. Planning documents or zoning at sea are also

taken into account, as are of course the ORE zones already defined in previous calls for tenders. The first two published parts of the SBSB present renewable energies as socio-economic objectives and issues, and analyze their interactions with other activities and the environment. Based on these analyzes, the SBSB vocation map formalizes the distribution of renewable energies in different zones delimited in a manner adapted to each sea basin. For example, the Atlantic North West Channel SBSB distinguishes 12 zones, such as “abyssal plain”, “continental slope” or “southern Brittany” [49]. According to the North Atlantic West Channel SBSB, depending on the zones, “priority is given to one or more activities or environmental requirements in coexistence with other activities” [50]. The activities in a given zone are presented in order of importance. The general idea is not to exclude but to encourage the coexistence of uses. For example, in zone 3, the “central continental shelf”, priority is given to floating wind power and sustainable professional fisheries. The first two parts of the SBSB resulted in opinions from the environmental authority in accordance with the environmental assessment procedure [48]. These opinions indicate that the environmental authority recommends prioritising and locating the impacts of renewable energy. The strategic documents therefore have insufficient environmental impacts.

Two examples of the interaction between maritime planning documents (SBSB) and ORE planning can be given. The first example concerns the implementation of SBSBs. During the drafting of these documents, in December 2017, the Minister asked the coordinating prefects of the Mediterranean to identify macro-zones for the development of floating wind energy. In 2016, the coordinating prefects (maritime prefect and regional prefect) had already created a “Floating wind energy commission” within the Sea Basin Maritime Council, which is a consultative body. Following the Minister’s request, the prefects organised the identification of floating wind macro-zones within the framework of the “floating wind energy commission” by following a process similar to the sectorial planning exercises of the OREs. The results were delivered in June 2018. The Mediterranean SBSB vocation map therefore contains four macro-zones for floating wind turbines [51]. This zoning should then be used to determine the areas suitable for future floating wind projects in the new sectorial planning. It is conceivable that in the future all SBSBs will define macro-zones for the development of OREs, which will then be applied in sectorial planning.

The second example is the definition of suitable areas based on the results of the SBSB for the launch of a tender procedure for a 1 GW wind project off Normandy. This identification of suitable areas is the first application of the 2018 Act providing for public debate. The Ministry in charge of Energy has asked the National Commission for Public Debate to organize a public debate. The NCPD decided to organize the debate in November 2019. The SBSB East Channel North Sea identifies zone 3 (*Côtes d'Albâtre* and its openings) with the aim of “strengthening renewable energies at sea”, and zone 5 (*Baie de Seine Large*) with the aim of “encouraging their development”. According to the government, these two areas constitute a macro-zone of 10,500 km² in total. The public will have to answer the question of which area of a wind farm, of about 300 km², associated with a study area for connection to the electricity grid, would be the most favourable? The public is also asked to identify other areas of 300 km² for future park projects beyond 2023 in accordance with the MAEP. While the concept of “macro-zones” is beginning to take hold in the implementation of maritime spatial planning, it must be acknowledged that there is no definition of this concept and that administrative practice in this area varies from one sea basin to another. Anyway, these examples show the integration between ORE planning and maritime spatial planning.

Finally, it is important to note the legal strength of the SBSB in order to understand the role it can play in the planning of OREs. Article L 219-4 of the Environmental Code provides that certain projects, plans or programmes must be compatible with the objectives or provisions of the SBSB. These are precisely public and private works or development projects subject to environmental impact assessment. Installed or floating wind energy projects are in fact concerned. About plans and programmes, this includes “plans, programmes and schemes” relating to activities exclusively located in maritime areas under sovereignty or national jurisdiction, the overlying airspace, the seabed and the subsoil of the sea. The question here is to what extent sectorial planning should be compatible with the

SBSD? The lack of regulatory existence of sectorial planning (i.e. the identification of suitable areas) prevents a legal link from being established with the SBSB since sectorial planning is neither a plan, nor a programme nor a scheme within the meaning of the Environmental Code. Moreover, it is too early to say whether the changes made by the ESSOC Act indicating that the public is consulted on the “choice of the location of the potential location(s) of the proposed facilities” change the legal nature of “sectorial planning”.

As the law currently stands, while the Minister's selection of suitable areas for ORE projects may theoretically disregard a SBSB, applications for administrative authorizations for such projects must nevertheless respect, as a compatibility link, the content of the SBSB. The SBSB are therefore an essential strategic planning tool as soon as they come into force.

5. Conclusion

The law of OREs is based on a disparate set of policies and legal sources. In this context, it is clear that the guide and legal framework for ORE planning is energy and climate law. Nevertheless, the transition from renewable energy programming to essential spatial planning raises many questions, mainly because of the specific nature of the marine space. The administration in charge of energy has gradually set up a decentralized sectorial administrative planning, without any real regulatory character, which is positioned between the national strategy and the procedures for putting energy law into competition. This “sectorial planning” attempts to overcome difficulties related to stakeholder and public participation, respect for the environment and the specificities of marine planning. Weaknesses in participation, conflict resolution and environmental assessment have probably played a role in the litigation that has severely slowed the implementation of offshore wind projects launched in 2011 and 2013. However, several legislative changes and administrative practices have changed this planning process towards better maritime, participatory and environmental integration.

In conclusion, we can highlight three main questions concerning the improvement of the planning process. Firstly, the maritime spatial planning provided for by the European Union was finally carried out in 2018 through the sea basin strategic documents. The administration integrates the results of this process into sectorial planning. In practice, therefore, there is an integration of these two planning categories. In the case of floating wind turbines, administrative practices have created unprecedented interactions between the two planning categories. Secondly, the 2018 legislation clearly improved the planning process by providing a legal framework for participation in the selection of suitable areas before a competitive process is launched. Sectorial planning participation is now subject to precise regulation by an independent administrative authority, which admittedly only concerns public and stakeholder participation. This new participation process could reduce future jurisdictional disputes over the selection of ORE project sites. Thirdly, environmental considerations through a formal strategic assessment procedure are taken into account in the preparation of the energy programming document and in the preparation of maritime strategic documents. The assessments carried out in this area do not specifically address marine renewable energy and their limitations could be highlighted. Above all, the sectorial planning stage still does not include a strategic environmental assessment because it is not a regulated procedure as such. Even if the environmental information submitted for public assessment in practice is strengthened, many issues will remain outstanding, such as the problem of cumulative effects.

Finally, the planning of OREs is now organized around a better integration of this system. As a result, the instruments of energy law and those of the law of the sea and coastline are now better integrated and public participation is more effective. As for environmental integration, while some significant progress has been made, its real improvement could certainly be achieved through the adoption of a clear regulatory framework for the sectorial planning of offshore renewable energy.

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