



# Compilation of Environmental Regulations & Obligations

Deliverable n°: 7.4



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## Deliverable Nº 7.4

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## 1. EXECUTIVE SUMMARY

The FloatGen project's objective is to demonstrate the technical and economic viability of floating wind turbines, in order to expand the development potential of offshore renewable energy into windier and deeper waters that are not currently considered commercially viable.

A test site (SEMREV) has been allocated by Ecole Centrale de Nantes on the French Atlantic coast offshore from the city of Le Croisic.

This document aims to summarise the environmental regulations and obligations associated with floating wind turbines. However, owing to the lack of specific floating-turbine legislation, the approach for this deliverable has been to compile applicable legislation from the conventional offshore wind turbine industry.

Although two environmental impact assessment documents have already been submitted for the SEMREV test site, the project has been approved, and environmental permitting is in place; this document aims to summarise the legislative requirements in cases where further floating wind turbine sites are planned at additional sites along the French coast or in other European waters.

A summary of the legislative instruments that influence offshore wind projects is provided in Table 1.1, more information is provided in Sections 4 to 6.

**Table 1.1: Summary table of legislative instruments influencing the life cycle of offshore wind projects**

	National / Local	Regional	European	International
<b>Location</b>	<p>French government offshore wind site tendering process (Exploitation / Authorisation Concession)</p> <p>General Code of Ownership of Public Entities and Decree No.2004-308 (Authorisation to occupy Maritime Public Domain)</p> <p>Water Act (Authorisation under Water Act)</p> <p>Environment Code and Act on National Commitment to the Environment 2010 (Impact Assessment)</p> <p>Decree No.2000-877, amended 2011 (Operating Licence)</p>	<p>Regional fishing agreements (e.g. GFCM, NEAFC)</p> <p>Barcelona Convention (Mediterranean only)</p>	<p>Birds Directive</p> <p>Habitats Directive</p> <p>Common Fisheries Policy</p> <p>Valletta Convention</p>	<p>UNCLOS</p> <p>IMO Conventions (COLREG &amp; SOLAS)</p> <p>Convention on Biological Diversity (Marine Protection Areas)</p> <p>MARPOL (Special Areas &amp; PSSAs)</p> <p>Regional fisheries management organisations (e.g. UNFSA, ICCAT)</p>

	National / Local	Regional	European	International
<b>Permitting &amp; Licensing</b>	Permit to operate / authorisation	OSPAR	EIA Directive (EIA)  Birds & Habitats Directive (Appropriate Assessment)	Espoo Convention (transboundary impact assessment)
<b>Monitoring</b>	Permit to operate / authorisation	OSPAR		UNCLOS
<b>Construction &amp; Operation</b>	Permit to operate / authorisation	Regional fishing agreements (e.g. GFCM, NEAFC)  Bonn Agreement	Common Fisheries Policy  European Union Council Directive on the introduction of measures to encourage improvements in the safety and health of workers at work (Emergency Response Plan)	MARPOL  IALA (recommendations document)
<b>Removal / Decommissioning</b>	Permit to operate / authorisation  Environment Code	OSPAR		UNCLOS  IMO

## 2. ACRONYMS

ADEME	Agency for Environment and Energy Management (France)
CBD	Convention on Biological Diversity, 1992
CFP	Common Fisheries Policy
COLREGs	Convention on the International Regulations for Preventing Collisions at Sea, 1972
CRE	Commission Régulation de l'Energie (France)
EC	European Commission
EEZ	Exclusive economic zone
EIA	Environmental impact assessment
ERP	Emergency response plan
EU	European Union
GFCM	General Fisheries Commission for the Mediterranean
IALA	International Association of Marine Aids to Navigation and Lighthouse Authorities
ICCAT	International Convention for the Conservation of Atlantic Tunas
ICPE	Installations classées pour la protection de l'environnement" (facilities classified in view of protecting the environment)(France)
MARPOL	International Convention for the Prevention of Pollution from Ships, 1973/78
NEAFC	Convention of Future Multilateral Co-operation in North-East Atlantic Fisheries
OSPAR	Convention for the Protection of the North-East Atlantic, 1992
PSSA	Particularly Sensitive Sea Area
RFMOs	Regional Fisheries Management Organisations
SAC	Special Areas of Conservation
SOLAS	International Convention for the Safety of Life at Sea, 1974/78
SPA	Special Protection Areas
SPAMI	Specially Protected Areas of Mediterranean Interest
UNCLOS	United Nations Convention on the Law of the Sea, 1982
UNFSA	United Nations Convention relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks, 1995

### 3. INTRODUCTION

The FloatGen project's objective is to demonstrate the technical and economic viability of floating wind turbines, in order to expand the development potential of offshore renewable energy into windier and deeper waters that are not currently considered commercially viable.

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Sections 4 to 6 of this document outline the local / national, European / regional, and international legislative instruments influencing offshore wind projects.



## 4. LOCAL & NATIONAL LEGISLATIVE REQUIREMENTS

### 4.1 PERMITTING, LICENSING & APPROVALS

The French offshore wind power development programme is part of the "Grenelle de l'environnement" initiative that was launched by the French Government in May 2007 and which subsequently led to the adoption of two important laws dated 3 August 2009 and 12 July 2010 (the so-called "Grenelle I" and "Grenelle II" laws) for the implementation of environmental undertakings adopted in the initiative.

These laws led to significant changes in the regulatory framework for wind turbines. In particular Grenelle I aims to implement the French government's ambitious goal of increasing the use of renewable energy sources in France by 2020 (Froding, 2012)<sup>1</sup>.

Part of this reform was the general classification of **onshore** wind turbines as "*installations classées pour la protection de l'environnement*" (facilities classified in view of protecting the environment) or ICPE which must undergo ICPE licensing and fulfil other obligations (Froding, 2012).

**It should be noted that offshore wind turbines are not currently classified facilities under ICPE<sup>2</sup> and therefore follow a different licensing / permitting regime, with most authorisations and approvals being sectoral.**

Authorities at regional level (Prefect of Department<sup>3</sup>, Maritime Prefect) and national level (Ministries of Ecology, Sea, Industry, Fishing, Environment and the General Secretariat of the Sea, Commission Régulation de l'Energie (CRE), Agency for Environment and Energy Management (ADEME)) are involved in the permitting procedure (Seanergy 2020, 2011a).

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<sup>1</sup> National renewable energy action plan (NREAP) offshore installation target 6GW by 2020.

<sup>2</sup> Some activities are not covered by the ICPE permit for example a specific permit is required for: Water installations or activities when the ICPE regime does not apply (Articles L.214-1 et seq. and R.214-1 et seq., Environment Code). <http://uk.practicallaw.com/7-503-4572#a811611>

<sup>3</sup> On a local basis, the state representative in each *département* (French administrative division) is the Prefect, who notably grants environmental permits and controls compliance with applicable regulations.

A summary of licences / permits required for an offshore wind development in French waters is provided in Table 4.1.

Current planning instruments in France cover coastal areas and territorial waters (up to 12 nautical miles) but do not cover the Exclusive Economic Zone (EEZ). If future projects include the siting of floating wind turbines outside territorial waters it will be a key requirement for France to put in place an appropriate legislative framework.

**Table 4.1: Necessary authorisations for offshore wind farms in French waters**

Name of licence	Legislation	Requirements	Reference
<b>Exploitation authorisation / concession</b>	The French government currently grants this concession as part of the tendering process for offshore wind farm sites.	Exploitation authorisation / concession is granted through tender process but stills needs to be completed with: <ul style="list-style-type: none"> <li>• An authorisation to occupy the maritime public domain</li> <li>• An EIA and impact study on Natura 2000 sites</li> <li>• An authorisation pursuant to the water regulations (Environment Code).</li> </ul>	Seenergy 2020, 2011a
<b>Authorisation to occupy the maritime public domain<sup>4</sup></b>	In accordance with article L. 2124-3 of the code général de la propriété des personnes publiques and Decree n° 2004-308 of 29 March 2004, offshore wind farms are established	An application must be submitted to the department Prefect in the nearest terrestrial territory and consultation carried out with the maritime Prefect (which is a military authority). The application must include a number of documents concerning the applicant and the characteristics of the project.	Ashurst Paris, 2011

<sup>4</sup> Under French law and the United Nations Convention on the Law of the Sea (UNCLOS) the territorial sea extends to 12 nautical miles from the low waterline. Developers must obtain a temporary authorisation of occupation in this area. The SEMREV test site is just over 11 nautical miles from Le Croisic, and less from Ile d’Houat and Belle-Ile-Mer (northwest of the site), so the site is considered to be within the public maritime domain.

Name of licence	Legislation	Requirements	Reference
	under a concession that enables an operator to use the State's maritime public property (concession d'utilisation du domaine public maritime).	Application requires the production of an environmental impact study. Use of the public domain cannot exceed 30 years, however, renewal can be requested by the operator.	
<b>Authorisation under the Water Act</b>	Authorisation under the Water Act is mandatory to the extent that: 1) Offshore wind turbines are not classified facilities; 2) They are works making contact with the marine environment and have a value greater than, or equal to, 1.9 million euros (derived from Article R.214-1 of the Environment Code).	Documents to be submitted include an environmental impact assessment (to include impact of suspended sediments, and trenching of cables).	Par Armelle Sandrin-Deforge, 2013
<b>Environmental impact assessment</b>	Work projects and public or private developments which by their nature, size or location, are likely to have significant effects on the environment or human health are required to be preceded	A specific permitting scheme applies to installations, works or activities which have an impact on the aquatic environment ( <i>installations, ouvrages, travaux et aménagements</i> ). These installations, works or activities are listed in the annex to Article R.214-1 of the Environment Code. Depending on its importance and impact, the	Ministère de l'Écologie, de l'Énergie, du Développement durable et de la Mer, en charge des Technologies vertes et des

Name of licence	Legislation	Requirements	Reference
	<p>by an impact assessment (Article L 122-1 of the Environment Code, amended by Section 230 of the Act on National Commitment to the Environment (12 July 2010)).</p>	<p>project requires either a declaration, or the issuance of an authorisation (Articles L.214-1 and R.214-1 Environment Code). The Prefect issues the permit according to a procedure that is very similar to the ICPE permit.</p> <p>An EIA notably includes:</p> <ul style="list-style-type: none"> <li>• a description of the project;</li> <li>• an analysis of the initial condition of the environment;</li> <li>• an analysis of the project's impacts;</li> </ul> <p>and</p> <ul style="list-style-type: none"> <li>• measures contemplated to avoid, reduce or compensate significant adverse effects.</li> </ul> <p>Offshore wind farms are subject to impact study under the application procedure for use of the public maritime domain.</p> <p><b>Public consultation</b></p> <p>To grant a license or permit to authorise an activity in the marine environment, the issuing authorities are required to take into consideration the recommendations, comments and advice provided by a wide range of stakeholders in accordance with the existing consultation procedure.</p> <p>As stated in Articles L123-1 to 16 and R123-1 to 46 of the Environment</p>	<p>Négociations sur le Climat, 2010</p> <p>Thomas Reuters, 2015</p>

Name of licence	Legislation	Requirements	Reference
		<p>Code, public inquiry is the major component of public involvement in environmental decision making. Moreover, it is a way for the public to determine the content of project impact assessments.</p> <p>Grenelle II widened the scope of the public inquiry procedure to encompass people not directly affected by the project. The objective of the procedure is henceforth to ensure "public information and involvement as well as third-party interests recognition " (Article L123-1). In order for public involvement to be beneficial, observations and propositions gathered during the inquiry must be considered by the project owner and the competent authority in their decision making<sup>5</sup>.</p>	
<b>Operating licence for a facility that produces electricity</b>	Decree No. 2000-877, 7 September 2000 as amended by that of 14 December 2011	Wind turbines over 30MW of installed capacity (on land or sea) are subject to an authorisation issued by the Minister of Energy.	Par Armelle Sandrin-Deforge, 2013
Note: Building permits are no longer required for offshore wind turbines as under Grenelle II they are exempt from the Town Planning Code due to their location at sea (Par Armelle Sandrin-Deforge, 2013).			

<sup>5</sup> <http://www.internationallawoffice.com/newsletters/detail.aspx?g=d93451ba-567c-4ba3-8fd8-65784be46c6c>

### Future amendments to permitting regime

The French government is currently reviewing the offshore wind power tender process in order to encourage competition and drive down costs, and is also simplifying the regulatory process for offshore wind. It is anticipated that in 2015, or early 2016, the government will issue decrees allowing regional authorities to grant a single permit covering the facility, inter-array cables and offshore substations, with another permit for grid connection<sup>6</sup>.

## 4.2 CONSTRUCTION & OPERATION

### Permit / Approval

Once a project is approved, the resulting permit will contain comprehensive provisions relating to the installation and operation of the facility, its emissions to the environment, as well as hazard prevention and monitoring measures.

The approval for testing of wind turbines on the SEMREV test site was issued on the 23 December 2013 (2013/BPUP/099)<sup>7</sup>. The Approval includes the following obligations for the construction and operation phase:

- The prototypes will be tested to meet technical and environmental constraints, in particular the anchoring arrangements and the possibility of scour.
- The prototypes will be equipped with automatic identification systems to track their position continuously.
- The Water Police (la Police de l'Eau) will be informed prior to the installation and decommissioning of the prototypes. They will be informed of any incidents during the work and will be allowed free access to the site.
- All necessary measures will be taken to ensure safety of life at sea (lighting, markings, etc).
- Fluids (oils, paints, corrosion protection products) used for the operation of the prototypes will be non-toxic to the marine environment.
- In case of any incident that causes pollution, the operator will take immediate steps to limit the impact on the environment. The Water Police<sup>8</sup> and Le Croisic municipality will be informed

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<sup>6</sup> <http://www.windpoweroffshore.com/article/1335238/france-learns-progresses>

<sup>7</sup> "Arrêté n°2013/BPUP/099": authorizes the Ecole Centrale de Nantes to extend the SEMREV test site to include the use of Floating Wind Turbines offshore of the territory belonging to "Le Croisic" municipality.

within 24 hours, along with the measures taken to address the incident and within 15 days of the incident of all the corrective measures taken to reduce the risk of accidental pollution.

- The Ecole Centrale de Nantes will distribute public information on SEMREV activities during the test phase.

### **Navigation**

Navigation rules inside the SEMREV test area are regulated by decree N° 2014/022<sup>9</sup> issued by the Prefecture maritime for the French Atlantic Coast. Navigation, berthing and anchorage of any vessels or recreational boats are prohibited on SEMREV test site. Fishing and scuba diving activities are also forbidden on the site.

The Developer must meet the requirements of the Civil and Military Agencies (Maritime Prefecture) for safety during transport to site and the requirements of the Maritime & Coastguard Agency for navigational safety during transport to site and operation on site. The installation process of the floating wind turbines shall be defined by consulting the North Defence Aerial Zone that coordinates the Piriac Semaphore system.

### **Marking & Lighting**

The developer will conform with the marking and lighting decree issued by the Prefect<sup>10</sup> and the ministerial decision taken 16/05/13 concerning experimental wind turbine marking. A synthesis of this information is provided in Deliverable 4.5: SEMREV Test Site Requirements.

## **4.3 MONITORING**

### **Permit / Approval**

The approval for testing of wind turbines on the SEMREV test site was issued on the 23 December 2013 (2013/BPUP/099). The Approval includes the following provisions for monitoring:

- Annual monitoring of the depth of burial of the export cable and the status of any concrete protection mattresses.

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<sup>8</sup> The Office National de l'Eau et des Milieux Aquatiques (National Agency for Water & Aquatic Environments).

<sup>9</sup> "Arrêté n°2014/022": regulates navigation, station-keeping, mooring, trawling, dredging and diving on the SEMREV site and over a portion of the SEMREV export cable route.

<sup>10</sup> "Arrêté du 13 novembre 2009": Decree taken by the Prefect concerning the wind turbine marking application.

- Monitoring of the acoustic impact of the prototype on marine organisms.
- Monitoring of the status of benthic communities following decommissioning, at the test site and in the vicinity of the export cable.

#### 4.4 REMOVAL / DECOMMISSIONING

In order to ensure the reversibility of any change to the natural environment brought about by the offshore wind facilities, the operator to which the concession is granted will be required to provide a financial guarantee for the full duration of the project to allow for the decommissioning of the facilities and the restoration of the site at the end of the term of the concession. The amount of the guarantee will be determined based on the estimated decommissioning and restoration costs of the site (Ashurst Paris, 2011).

According to Article L.553-3 of the Environment Code the operator, or its parent company, is responsible for dismantling and rehabilitation of the site as soon as the wind farm is out of service. This responsibility is composed of two points, funding bonds for dismantling when the farm is commissioned, and dismantling when decommissioned.

Articles R.533-1 to R.553-4 of the Environment Code set up a mandatory funding of security bonds for dismantling in order to avoid failure of the operator to proceed with dismantling works. The bonds amount to 50,000 euros for each turbine and should be created before the commissioning of the project. The security has to be renewed annually at the start of each financial year. Article R516-2-I of the Environment Code ensures that the security bond is effectively a written commitment from an insurance company or credit institution.

Additionally, Articles R.533-r to R.553-8 of the Environment Code include requirements for:

- dismantling the installations and the system for connecting to the grid;
- recycling of the waste that has resulted from the works to relevant recycling centres; and
- excavation of the foundations and replacement of the groundworks (Watson, Farley & Williams, 2011).

When the operation comes to an end, the operator has an obligation to remediate the site. The Prefect can impose measures for remediation (Article L.214-3-1, Environment Code).



**Permits / Approvals (specifically for the SEMREV site)**

The approval for testing of wind turbines on the SEMREV test site was issued on 23 December 2013 (2013/BPUP/099). This document includes the following provisions for monitoring:

- At the end of the test site operation the facilities will be dismantled and items recovered and recycled.

According to the “Concession d’utilisation du Domaine Public Maritime” the developers using the SEMREV site shall proceed to the complete demolition of the infrastructures established and hosted on SEMREV concession (including complete mooring systems or foundations), and cover the corresponding operational costs. These infrastructures will be recovered and recycled.

The SEMREV developers shall leave to the “Caisse des Dépôts et Consignation” a deposit equal to the total amount of the dismantlement in order to ensure the prototypes removal.

## 5. EUROPEAN & REGIONAL LEGISLATIVE REQUIREMENTS

### 5.1 LOCATION & PERMITTING, LICENSING AND APPROVALS

#### **Birds & Habitat Directives**

In May 1992 the European Union governments adopted legislation designed to protect the most seriously threatened habitats and species across Europe. This legislation is called the Habitats Directive and complements the Birds Directive established in 1979. The Habitats Directive and the Birds Directive require Member states to identify and protect areas for the conservation of species or habitats they host. The Birds Directive requires the establishment of Special Protection Areas (SPAs) for birds. The Habitats Directive similarly requires Special Areas of Conservation (SACs) to be designated for other species and for habitats. Together SPAs and SACs make up Natura 2000.

It is important to note that the Natura 2000 network is not a system of strict nature reserves where all human activities are excluded. Instead the two Directives provide a common legislative framework, applicable in all EU countries, which ensures that human activities (including wind energy projects) are undertaken in a way that does not affect the integrity of Natura 2000 sites.

Any plan or project likely to have a significant effect on a Natura 2000 site, either individually or in combination with other plans or projects, shall undergo an 'Appropriate Assessment' to determine its implications for the site. The competent authorities can only agree to the plan or project after having ascertained that it will not affect the integrity of the site concerned (Article 6.4). The outcome of the Appropriate Assessment is legally binding.

#### **Environmental Impact Assessment Directive**

The EIA Directive (85/337/EEC) has been in force since 1985 and applies to a wide range of defined public and private projects, which are defined in Annexes I and II:

- Mandatory EIA: all projects listed in Annex I are considered as having significant effects on the environment and require an EIA.
- Discretion of Member States (screening): for projects listed in Annex II, the national authorities have to decide whether an EIA is needed. This is done by the "screening procedure", which determines the effects of projects on the basis of thresholds/criteria or a case by case examination.

The EIA procedure can be summarized as follows: the developer may request the competent authority to say what should be covered by the EIA (scoping stage); the developer must provide information on the environmental impact (EIA report – Annex IV); the environmental authorities and the public (and affected Member States) must be informed and consulted; the competent authority decides, taking into consideration the results of consultations. The public is informed of the decision afterwards and can challenge the decision before the courts<sup>11</sup>.

Offshore wind farms fall under Annex II of the EIA Directive, as ‘installations for the harnessing of wind power for energy production (wind farms)’. Annex II projects require an EIA where they are likely to have significant effects on the environment by virtue of factors such as their nature, size or location.

### **Fishery Policies and Agreements**

Within the EC fisheries and aquaculture are governed by the Common Fisheries Policy (CFP). The CFP Framework Regulation provides a legal basis for the adoption of measures concerning conservation, management of resources and limitation of the environment impact of fishing. The general objective of the CFP is to ensure the exploitation of living aquatic resources that provides sustainable economic, environmental and social conditions (Article 2(1)).

Further regional instruments are also in place. These include the Convention of Future Multilateral Co-operation in North-East Atlantic Fisheries (NEAFC) and the Agreement for the Establishment of a General Fisheries Commission for the Mediterranean (GFCM).

Presently there are no regulatory restrictions on the development of fisheries and the establishment of offshore activities such as wind farms. However, fisheries are a well known and widespread sea use function in European waters. CFP aims to ensure sustainable exploitation of fisheries resources. This means reducing the number of fishing vessels and the duration of the fishing period, and the establishment of open and closed fishing seasons and areas. These can influence the location and some operational phases of offshore renewables.

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<sup>11</sup> <http://ec.europa.eu/environment/eia/eia-legalcontext.htm>

## **OSPAR**

The OSPAR Commission adopts legally binding regulations requiring Member States to adopt procedures and actions related to marine environment protection, which can influence the licensing and permitting procedure for the development phase of offshore renewable energy projects.

## **Barcelona Convention**

The Barcelona Convention encourages the establishment of specially protected areas called 'Specially Protected Areas of Mediterranean Interest' (SPAMI) and provides protective measures for the protection of the Mediterranean against pollution. The protection measures for SPAMI could influence the location of any offshore renewable activities planned in the Mediterranean.

## **European Convention on the Protection of the Archaeological Heritage (Revised) (1992) (the Valletta Convention)**

The Valetta Convention is a multilateral treaty of the Council of Europe. The 1992 treaty aims to protect the European archaeological heritage "as a source of European collective memory and as an instrument for historical and scientific study. All remains and objects and any other traces of humankind from past times are considered to be elements of the archaeological heritage. The archaeological heritage shall include structures, constructions, groups of buildings, developed sites, moveable objects, monuments of other kinds as well as their context, whether situated on land or under water." (Art. 1)

The convention binds contracting parties to implement protective measures for the archaeological heritage within the jurisdiction of each party, including sea areas, and requires that the archaeological environment is given appropriate consideration (Seanergy, 2011b).

## **5.2 MONITORING**

### **OSPAR**

Under the OSPAR Commission, parties have obligations to undertake regular marine environmental monitoring campaigns.

## 5.3 CONSTRUCTION AND OPERATION

### **Bonn Agreement for Co-operation in Dealing with Pollution of the North Sea by Oil and Other Harmful Substances (1983)**

The Bonn Agreement is the mechanism by which the North Sea States and the European Community (the Contracting Parties), work together:

- to help each other in combating pollution in the North Sea area from maritime disasters and chronic pollution from ships and offshore installations
- to carry out surveillance as an aid to detecting and combating pollution at sea.

With regard to the legal situation, wind farms are dealt with in a similar way as offshore installations (oil and gas production installations). The owner is responsible for taking appropriate measures to avoid leakage and the owner is held liable and will be required to recover the spilt oil and clean up pollution.

Chapter 8 of the Bonn Agreement Counter-Pollution Manual sets out the considerations that need to be taken into account if any problems are encountered associated with wind farms. It is based on the 'polluter pays' principle (Seanergy, 2011b).

### **Fishery Policies and Agreements**

Construction and maintenance activities can be influenced or restricted during particular fishing seasons (open / closed) and in particular areas.

### **European Union Council Directive on the introduction of measures to encourage improvements in the safety and health of workers at work (89/391/EEC)**

According to article 8, paragraph 1:

- the employer shall take the necessary measures for first aid, fire-fighting and evacuation of workers, adapted to the nature of the activities and the size of the undertaking and/or establishment and taking into account the other persons present;
- the employer shall arrange any necessary contacts with external services, particularly as regards first aid, emergency medical care, rescue work and fire-fighting.

In response to this Directive an Emergency Response Plan (ERP) covering all the activities at the workplace should be in place prior to the start of activities. The ERP should be based on risk assessment, and be project, turbine and site specific. Different scenarios might occur that will require immediate response from trained personnel and possibly external services. All procedures and roles should be clearly defined for each possible scenario. Any third party or external involvement should be communicated and agreed to in advance (EWEA, 2013).

## 5.4 REMOVAL / DECOMMISSIONING

### **OSPAR**

The OSPAR Commission adopted in 1989 a legally binding regulation for the disposal of disused offshore installations. Parties have the obligation to foresee the disposal of disused offshore installations.

## 6. INTERNATIONAL LEGISLATIVE REQUIREMENTS

### 6.1 LOCATION

#### **United Nations Convention on the Law of the Sea (UNCLOS)**

UNCLOS recognises the sovereignty of the coast and over its territorial sea and has the right to set laws and regulate the use of any natural resources. Within the EEZ the coastal state has sole exploitation rights over natural resources, including the production of energy from the sea. Thus, in accordance with UNCLOS, offshore renewable energy projects may be built anywhere within the EEZ and a safety zone of 500m around can be established. The possibility to declare safety areas under UNCLOS requires co-ordination between users and a common interpretation, in order to avoid misuse of these buffer areas and overloading of the maritime space.

With respect to cable laying, a Coastal State cannot control the laying by other States of cables passing through its EEZ. UNCLOS preserves the freedom to do so (Article 58). However, delineation of cables is subject to the consent of the Coastal State (Article 79). Within the territorial sea the Coastal State has more comprehensive control on cable laying and can impose restrictions on these.

#### **International Maritime Organisation (IMO) Conventions**

Sea lanes and traffic separation schemes regulated by the IMO are considered as exclusion zones and are reserved for navigation and shipping (Convention on the International Regulations for Preventing Collisions at Sea (COLREG 1972) and International Convention for the Safety of Life at Sea (SOLAS 1974/78)). These areas cannot be considered as compatible with offshore energy generation, mainly for the sake of safety of shipping.

#### **International Convention for the Prevention of Pollution from Ships (MARPOL 1973/78)**

The MARPOL Convention is the main international convention covering prevention of pollution of the marine environment from ships from operational or accidental causes. MARPOL defines certain areas as 'Special Areas' in which the adoption of special mandatory methods for the prevention of pollution is required.

Building upon MARPOL, the IMO adopted Guidelines for the identification of 'Particularly Sensitive Sea Areas' (PSSAs). A PSSA is defined as an 'area which needs special protection through action by

IMO because of its significance for recognised ecological or socio-economic or scientific reasons and which may be vulnerable to environmental damage from maritime activities’.

PSSA boundaries appear on international navigational charts and the designation carries with it the associated protective measures recognised by the IMO. Although PSSA requirements are not specific with respect to wind farms, it is assumed that the impact assessment would have to take into account the designated area.

The following PSSAs have been designated:

- The Wadden Sea, Denmark, Germany, Netherlands (2002)
- Western European Waters (2004)
- Canary Islands, Spain (2005)
- The Baltic Sea area, Denmark, Estonia, Finland, Germany, Latvia, Lithuania, Poland and Sweden (2005)

#### **Convention on Biological Diversity (CBD)**

The CBD obliges its parties to develop national strategies for the conservation and sustainable use of biological diversity, including the establishment of protected areas. It requires the Contracting Parties to integrate the conservation and sustainable use of biological diversity into relevant sectoral or cross-sectoral plans and policies.

In 2004 the Parties to the CBD committed themselves to designating a system of representative, comprehensive and effectively managed Marine Protection Areas (MPAs) by 2012. These MPAs should be taken into account during marine spatial planning and may influence the location of offshore renewable activities and grid related infrastructure.

#### **Convention on Environmental Impact Assessment in a Transboundary Context (ESPOO Convention)**

The ESPOO Convention obliges Parties to assess, at an early stage of planning, the environmental impact of certain projects entailing possible transboundary impacts. It also lays down general obligations of states to notify and consult each other on all major projects under consideration that are likely to have a significant adverse environmental impact at a transboundary level. The Convention gives a list (Appendix I) of activities likely to have a significant adverse transboundary impact.



Offshore renewable energy projects are not included within Annex I. These activities would therefore only be subject to the procedure where the concerned parties agree on the adverse transboundary impact of the project. The Convention does not establish an international EIA procedure but outlines specific conditions to be incorporated into national environmental impact assessment procedures.

### **Agreements establishing regional fisheries management organisations**

Regional Fisheries Management Organisations (RFMOs) are international organisations formed by countries with fishing interests in an area, and dedicated to the sustainable management of fishery resources in international waters, or of highly migratory species (e.g. UNFSA and ICCAT).

While a few are purely advisory, most RFMOs have management powers and take regulatory decisions regarding fishing limits, technical measures (permitted gear, etc), and monitoring and surveillance of fishing activities. By establishing fishing limits and controlled zones RFMOs may influence the location of offshore renewable activities (Seanergy, 2011b).

## **6.2 MONITORING**

### **UNCLOS**

UNCLOS obliges its parties in principle to protect the maritime environment and stipulates obligations to environmental monitoring and assessment.

## **6.3 CONSTRUCTION AND OPERATION**

### **International Convention for the Prevention of Pollution from Ships (MARPOL 1973/78)**

As stated earlier, MARPOL is the main international convention covering pollution of the marine environment from ships. There have been several amendments to the Convention since it was first produced, and MARPOL now has six technical annexes covering marine pollution by

- oil (Annex I)
- noxious liquid substances carried in bulk (Annex II)
- harmful substances carried in packaged form (Annex III)
- sewage from ships (Annex IV)
- garbage from ships (Annex V)

- air pollution from ships (Annex VI).

In addition, there are requirements for ship survey and certification for pollution prevention in the marine environment.

All vessels involved in the construction, operation, maintenance, inspection and decommissioning of wind turbines, in a convention countries waters, are required to operate in accordance with MARPOL 73/78.

#### **International Association of Marine Aids to Navigation and Lighthouse Authorities (IALA)**

In terms of requirements for marking and lighting of offshore wind turbines, reference should be made to the recommendations document 'O-139 On the Marking of Man-Made Offshore Structures' Section 2.3 Marking of Offshore Wind Farms (December 2008) which is a key source of information.

## **6.4 REMOVAL / DECOMMISSIONING**

### **UNCLOS**

Article 60 states the principle of the obligation to remove abandoned or disused offshore installations.

### **IMO**

In 1989 IMO adopted guidelines and standards for the removal of offshore installations and structures on the continental shelf and in the EEZ.

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