



Environmental Impact Assessment in the marine environment: A comparison of legal frameworks



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ABSTRACT

Environmental Impact Assessment (EIA) is a well-established practice in most developed countries, even though its application to projects in the marine environment is at a much earlier stage of development. We use the Portuguese example to address marine EIA legislation since its exclusive economic zone (EEZ) is currently the third largest in the European Union and its EIA legislation does not require various offshore activities with potentially negative environmental impacts to undergo EIA before being licensed. This paper aims to determine whether three types of projects implemented within Portuguese maritime zones – artificial reefs using sunken ships, hydrocarbon prospecting and wave-energy generation – would benefit from application of an appropriately designed EIA. We have conducted a structured review of EIA legal provisions from seven other countries, and considered whether a full EIA was required for each project type. Consequently, 12 Environmental Impact Statements (EIS) have been compared to identify patterns of (dis)similarity across countries and project types. Additionally, we identified key descriptors and predicted impacts for each project type referred to in their EIS. The main conclusion is that ultimately all three projects would benefit from mandatory EIA in Portugal. This paper is relevant for countries with large maritime areas and underdeveloped marine EIA legislation, helping improve international policy-making relating to these three types of marine projects.

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1. Introduction

Environmental Impact Assessment (EIA) is a well-established environmental management tool, as evidenced by its widespread use in the legal frameworks of most countries and both in international law and in standards of major lending institutions (Morgan, 2012).

One major objective of EIA is to support project licensing with sound and social responsive technical and scientific knowledge on the likely environmental effects (Pinho et al., 2007). However, even though EIA regulations apply to public and private projects which are likely to have significant effects on the environment (Directive 2011/92/EU), they are principally aimed at land-based development proposals. Thus, projects in the marine environment in areas of national sovereignty or jurisdiction are often not covered by EIA (Budd, 1999; Katsanevakis et al., 2011).

The marine environment is host to a diverse set of highly productive and complex ecosystems, contributing significantly towards biodiversity maintenance, food and energy provision, and the creation of economic

and cultural benefits (Barker and Jones, 2013). EIA should have a critical role when assessing and planning economic-driven activities affecting the marine environment, such as aquaculture, nautical tourism, wave-energy, and exploration for hydrocarbons, sands and gravel (Warner, 2012).

Considering that Portugal's exclusive economic zone (EEZ) is currently the third largest of the European Union (EU) (4 million km²) and that the existing Portuguese EIA legislation presents some shortages regarding projects that can be licensed within its maritime zones, we will use the Portuguese example to address possibly underdeveloped marine EIA legislation. Although several developments on the shoreline are subject to EIA in Portugal (e.g., harbors, marinas and port installations, dykes, dredging operations), offshore activities with potentially negative impacts on the marine environment are not covered by national or EU legislation, namely sinking of ships for recreational purposes, hydrocarbon prospecting, and wave-energy generation.

More than fifty artificial reefs were constructed or were being planned in the OSPAR Maritime Area (OSPAR Commission, 2009) because of their potential to enhance tourism-driven economic development (Pendleton, 2005) or fishing incomes (Whitmarsh et al., 2008). Yet, the scuttling of ships can also be considered dumping of waste as toxic materials and heavy metals are released in the process (Monfils

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et al., 2006), and ecosystems are altered (e.g., changes to waves and currents, displacement of and alterations to biological communities, exposure to pollution). In most countries there are still no binding regulations on the placement of artificial reefs, though some guidelines have been drawn in different European regions (OSPAR Guidelines, 2012; UNEP Mediterranean Action Plan, 2005) and several general regulations concerning protection of the sea against pollution are also applicable (e.g., London Convention and Protocol, Barcelona Convention, OSPAR Convention).

Regarding the oil and gas sector, high environmental pressures deriving from operations throughout the lifecycle of related activities (flaring, drilling, construction, transportation and discharge) are reported in the OSPAR area, especially the North Sea (Barker and Jones, 2013). Hydrocarbon exploration involves the construction of offshore installations, drilling and surveys that are sources of underwater noise, while production includes installation of pipelines, cables, subsea structures and platforms that greatly disturb the seabed physically, coupled with emission of volatile organic compounds, methane, sulfur dioxide, nitrogen oxides and carbon dioxide into the atmosphere (OSPAR QSR, 2010). The International Maritime Organization and the European Union have developed environmental measures relevant to the offshore industry, namely Directive 2013/30/EU on safety of offshore oil and gas operations. These recent rules intend to make sure that the highest standards are followed by oil and gas platforms across Europe; also it proposes to ensure an effective and prompt reaction should an accident occur.

Marine wave-energy is undergoing significant technological development, with wave-energy pilot projects spreading across Europe and reaching market-ready status (Margheritini et al., 2012). However, some authors consider its scientific basis scarce which may prevent an informed decision-making process based on its actual environmental impacts (Frid et al., 2012), especially at the level of the shoreline (Rusu and Soares, 2013; Palha et al., 2010). Also, since deploying wave-energy converters in full scale is an early practice, only few EIA have been carried out, with developers arguing that only minor environmental impacts can be expected and these are mostly associated with installation and decommissioning phases (Margheritini et al., 2012).

This paper analyzes the above-mentioned offshore marine projects by evaluating if and how subjecting three Portuguese case studies to EIA could contribute to overcoming some technical or methodological insufficiencies of their licensing processes. For this, we compare legal dispositions and EIA requirements of similar projects in other countries, along with their Environmental Impact Statements (EIS) or equivalent available documents, and identify key affected descriptors and predicted impacts. Our conclusions go beyond project design and planning in Portugal by elaborating on: (1) how other countries' EIA approach to these project types can inform Portugal's; (2) the specific benefits of subjecting three case studies to EIA; and (3) the possibility of harmonization between these projects' legal frameworks and other regulations. The paper thereby contributes to the improvement of policy-making relating to these three project types in countries with large maritime areas and underdeveloped marine EIA legislation.

2. Environmental Impact Assessment legislation in Portugal

EIA requirements were introduced in many EU Member States by Directive 85/337/EEC (on the assessment of the effects of certain public and private projects on the environment), in the Commission's first move to institutionalize an EU-wide preventive measure and estimation of possible negative environmental effects of future projects (Jiricka and Pröbstl, 2009). The EIA Directive of 1985 was amended three times (1997, 2003 and 2009) (European Commission, 2013).

Directive 97/11/EC brought the original EIA Directive in line with the Espoo Convention on EIA in a Transboundary Context, and widened its scope by increasing both project types covered and the number of projects requiring mandatory EIA. The 1997 Directive also provided

for new screening arrangements, including new screening criteria for some projects, and established minimum information requirements. Directive 2003/35/EC aligned the provisions on public participation with the Aarhus Convention (on public participation in decision-making and access to justice in environmental matters). Directive 2009/31/EC amended the EIA Directive by adding projects related to the transport, capture and storage of carbon dioxide. Ultimately, the initial Directive and its three amendments were codified by Directive 2011/92/EU.

In Portugal, EIA was first established as a principle in 1987, with the publication of the Base Law of the Environment, Law No. 11/87 (Art. 30 and 31).¹ EIA's legal regime was formally approved for the first time in 1990, through the transposition of Directive 85/337/EEC to domestic legislation by a Decree-Law (DL) (DL No. 186/90). This Portuguese Decree-Law was updated as new EU Directives arose, to transpose the amendments.

Currently in force, DL No. 151-B/2013 (amended by DL No. 47/2014) establishes the legal regime on Environmental Impact Assessment to be applied for significant effects caused by certain public and private projects on the environment, by transposing Directive 2011/92/EU. The new Decree-Law (DL) introduces minor changes to the scope of EIA, and focuses on articulating administrative procedures and clarifying the competences of the EIA authorities: the Portuguese Environmental Agency (APA), which is also the national authority of EIA and manages EIA processes for marine activities; and the Regional Development and Coordination Commissions (CCDRs).

In the national arena, EIA follows its typical procedure, after initial screening: (1) scoping (terms of reference; optional), (2) Environmental Assessment Report (containing relevant information about the project, its effects on environment and mitigation measures), (3) public consultation of relevant stakeholders, (4) Environmental Impact Statement (summary and decision about the project), and finally (5) a post-assessment phase (which includes analysis of monitoring reports, introduced by DL 151-B/2013).

A central feature of the EU EIA process is that it takes the form of a framework law, allowing Member States a certain amount of discretion in the implementation of the Directive (Barker and Wood, 1999). The European Commission has identified several procedural dissimilarities across the EU, namely in the way that the screening process is carried out, which may result in the number of EIA executed in some Member States being higher than expected – at times for projects with minor environmental impacts, thus creating unnecessary administrative burdens (European Commission, 2012). Conversely, in other Member States, it may be the case that certain projects with significant environmental impacts escape the EIA requirement.

The newly amended EIA Directive 2014/52/EU, not yet transposed to the Portuguese domestic legislation, introduces significant alterations to deal with these dissimilarities (European Commission, 2014).

The application of Portuguese EIA legislation to the marine environment is expected to increase in the near future. Recently approved maritime spatial planning (MSP) legislation relies significantly on the Portuguese EIA legislation for its implementation. Law No. 17/2014 established the national MSP regime, and defines two types of marine plans (Art. 7): situation plans, showing current uses and activities of the maritime space; and allocation plans, allocating areas or volumes of maritime space to existing and future activities or uses. DL No. 38/2015, which elaborates on the implementation of the MSP regime, determines that allocation plans are to be considered a project for impact assessment purposes (Art. 23) and therefore their approval is dependent on EIA result. However, the contents of an allocation plan have not been considered sufficient for a proper EIA to be carried out, nor is the current EIA legislation considered to address the specificities of the marine environment when

¹ This Law was revised and updated and it is currently Law No. 19/2014 (April 14th), which gives a generic definition of Environmental Assessment and a brief overview of its components, without specifically mentioning EIA.

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