

Chapter S6.0: Strategies to Aid Consenting Processes for Marine Renewable Energy

Supplementary Material

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S6.1. Marine Spatial Planning Approaches in OES-Environmental Countries

Table S6.1 provides an update to the information from O’Hagan (2020) for current OES-Environmental countries on marine spatial planning and policies related to marine renewable energy.

Table S6.1. Marine spatial planning (MSP)-specific approaches for the Ocean Energy System (OES)-Environmental countries (in alphabetical order by European Union (EU) countries first, then United Kingdom (UK) countries, followed by other countries), including information on how marine renewable energy (MRE) is incorporated in MSP. Table updated from O’Hagan (2020).

	Country	MSP-Specific Information
EU		The EU Maritime Spatial Planning Directive requires coastal member states to have marine spatial plans in place for their waters by March 2021 (Directive 2014/89/EU).
	Denmark	Denmark adopted the Maritime Spatial Planning Act (2016), which mandates MSP, as part of implementation of the EU Maritime Spatial Planning Directive. The latest maritime spatial plan was developed in 2021 and is currently under amendment. The plan applies to marine internal waters, the territorial sea, and the exclusive economic zone and includes several sectors such as offshore energy.
	France	MSP is implemented through “Strategic Façade Planning Documents,” coordinated by the Ministry for the Solidarity and Ecological Transition for each of four national sea basins (Decree No. 2017-724). Marine Spatial Plans were adopted in April/May 2022 for East Channel – North Sea, North Atlantic – West Channel, South Atlantic, and the Mediterranean. Liaison via a national Façade Maritime Council. Stakeholders from socio-economic sectors (fisheries, maritime transport, tourism, etc.), environmental sectors (marine protected areas, nongovernmental organizations), public authorities (at different levels: department, region, state),

		<p>scientific and academic sectors, etc. work together and raise questions, defend their interests, and address comments on a common regional approach for MRE development. This is conducted during the national public consultation “La Mer en Débat”, which was launched in November 2023 and which is dedicated to the Marine Spatial Plans.</p>
	Ireland	<p>The National Marine Planning Framework was launched in July 2021 to meet the requirements of the EU Maritime Spatial Planning Directive (Marine Institute 2022). The National Marine Planning Framework is a policy-based approach and does not allocate areas for specific uses.</p> <p>Sub-national forward spatial planning through the creation of Designated Maritime Area Plans (DMAPs) is provided for in the Maritime Area Planning Act (2021) and will be used to develop multi-activity area plans; to promote use of specific activities (such as ocean renewable energy); and/or for the purposes of the sustainable use and protection of particular marine environments. A future DMAP roadmap for ocean renewable energy is expected for publication in Q3 of 2024. This will incorporate a timeline for deployment including DMAPs catering to fixed offshore wind, floating offshore wind, wave, and tidal energy.</p>
	Portugal	<p>Underpinning the Portuguese MSP is Law nº 17/2014 (2014) that establishes the Basis for the Policy for the Planning and Management of the National Maritime Space (LBOGEM). This Law is in agreement with the EU Maritime Spatial Planning Directive. The LBOGEM was enabled by the Decree Law 38/2015 (2015). MRE development is reflected in MSP through inclusion of the Aguçadoura test site and designation of a Pilot Zone in San Pedro de Moel and a Free Technological Zone in Viana do Castelo.</p> <p>A final Situation Plan (2019) has been developed in which specific areas for MRE development along the coast have been identified. This Plan is currently being amended through augmentation of the Aguçadoura test site and the inclusion of specific areas for the development of offshore wind. The amendment was under public consultation in 2023.</p>
	Spain	<p>The EU Maritime Spatial Planning Directive was transposed into Spanish law through Royal Decree 363/2017 (2017).</p> <p>MRE has been taken into account in the MSP process, and representatives from the sector have participated in meetings related to marine plan development.</p> <p>Planes de Ordenación del Espacio Marítimo (POEM), adopted in February 2023, established plans for the five Spanish marine subdivisions: North Atlantic, South Atlantic, Estrecho and Alboran, Levantine-Balearic, and the Canary Islands.</p>

	Sweden	<p>The Swedish Planning and Building Act (2010) preceded the EU Maritime Spatial Planning Directive; the Swedish MSP was adopted in February 2022. There are three national plans that cover the Exclusive Economic Zone and the territorial sea: Gulf of Bothnia, Skagerrak/Kattegat, and Baltic Sea. The most recent Marine Spatial Plan (Swedish Agency for Marine and Water Management & Swedish Energy Agency 2023) was released in August 2023.</p> <p>The MSP includes wave energy development (Swedish Agency for Marine and Water Management 2022). Use of the MSP process helped identify sites for development zones for wave energy development.</p>
UK		<p>In the UK, the Marine Policy Statement establishes the structure for developing Marine Plans and making decisions that influence the marine environment in the UK (Government of the United Kingdom 2011). It has been formulated and endorsed in compliance with the Marine and Coastal Access Act (2009).</p> <p>This policy statement provides the high-level policy context under which new systems of MSP are being introduced in the UK. It provides the framework for national and sub-national plans to be developed, implemented, monitored, and amended and in doing so, it ensures consistency to this approach across the UK. This will also provide direction for updates to marine licensing and other relevant authorization systems.</p>
	England	<p>The Marine Management Organisation is responsible for preparing marine plans in England. The Marine Management Organisation has a duty to take decisions on proposed developments in a plan area in line with the MPS and marine plans.</p> <p>The draft Marine Plans for (inshore and offshore) North East, North West, South East and South West regions went through consultation in 2020 (Marine Management Organisation 2014a, 2014b, 2014c, 2014d). The next step is to submit the Marine Plans to the Secretary of State for Environment, Food and Rural Affairs for adoption.</p>
	Scotland	<p>The governance of MSP matters in Scotland's inshore waters is supported by the Marine (Scotland) Act (2010) and offshore waters by the Marine and Coastal Access Act (2009).</p> <p>Scotland's National Marine Plan (Scottish Government 2015) provides an overarching framework for all marine activity in Scottish waters (inshore and offshore). It sets out the objectives, general and sector-specific policies in the planning of developments, activities, and interests in Scottish waters. As part of the legal setting of this National Marine Plan, it is</p>

		<p>considered in all decision-making related to marine licenses and other consents in the marine environment.</p> <p>The National Marine Plan will be updated in the coming years (as of 2024) due to the acknowledgement by Scottish Ministers of the need to have more of a focus in marine planning on addressing the twin crises of climate change and biodiversity loss. This update will take several years.</p>
	Wales	<p>In compliance with the Marine and Coastal Access Act 2009 (2009), the Welsh National Marine Plan (Welsh Government 2019) was published in 2019. The plan sets out the Welsh Government’s policy for the sustainable use of Wales’ seas for the next 20 years. Specifically, it sets out the vision and objectives for the Welsh marine area and policies that will support those objectives. The goal is to support marine users and the sustainable development of Welsh seas. The Plan aims to facilitate the guidance and support of “effective and proportionate and consistent decision making” (Welsh Government 2020).</p> <p>Alongside the Welsh National Marine Plan sits the supplementary Implementation Guidance (Welsh Government 2020), which provides further detail on Plan policies to help ensure they are implemented effectively and consistently. This Implementation Guidance will be updated periodically as needed.</p>
Others	Australia	<p>Formal MSP processes exist across Commonwealth (3 to 200 nm) and State (high water mark to 3 nm) jurisdictions.</p> <p>Ocean policy established in 1998 was driving marine bioregional planning (Department of the Environment and Heritage 2006). The policy balanced social, economic, and environmental objectives. A new Sustainable Oceans planning process is underway, with its final form (and any implications for MSP) still being determined with documentation to be released in 2024. Any broad planning documents would need to account for offshore energy zones, in the same way as for other activity-related zoning.</p> <p>The state of Victoria developed the Marine and Coastal Policy 2020 document which outlines a Marine Spatial Planning Framework, including guidance and policies along with the process of MSP in Victoria (DEECA 2023). Other states also have marine use and planning arrangements, such as the Marine Estate in New South Wales, although sector-based planning is currently typical.</p>
	Canada	<p>The government is currently developing marine spatial plans in five areas across Canada that are ecologically, socially, and culturally unique (Fisheries and Oceans Canada 2023). The plans will establish boundaries, describe objectives, provide</p>

		environmental context, and involve Indigenous partners (Fisheries and Oceans Canada 2023).
	China	China developed MSP, called marine functional zoning (MFZ), to aid decision-making and help designate areas for use or environmental protection (Teng et al. 2021). Beginning in the 1990s, China has had several generations of MFZ with the most recent being the 2011 – 2020 National MFZ. MFZ has also been carried out at other levels, including by coastal provinces and coastal municipalities or counties. MFZ was then integrated into National Territorial Spatial Planning; the current phase spans 2021 – 2035. This phase includes issuing a National Spatial Survey, Planning, and Use Regulation, creating a classification guide for land and sea, and developing Integrated Coastal Zone Protection and Utilization Planning.
	India	The MSP framework was launched in the Puducherry coastline as part of the Indo-Norway Integrated Ocean Initiative. Puducherry and Lakshadweep were selected as coastlines to pilot the MSP framework (Ministry of Earth Sciences 2023). The principles of MSP are required for developing marine projects (Dineshababu et al. 2019). In 2020 the World Bank approved 400 million dollars for coastal work in India, with the first phase of the project including national marine spatial planning needs (The World Bank 2020).
	Japan	Japan has no formal MSP. The Basic Act on Ocean Policy does not mention MSP. The word MSP first appears in the third Basic Plan on Ocean Policy in 2018, and marine spatial plans are discussed and considered as already being in practice in planning of offshore wind power generation under the Act on Promoting the Utilization of Sea Areas for the Development of Marine Renewable Energy Power Generation Facilities (Wakita 2016, 2024).
	Mexico	The Marine and Regional Ecological Planning Program for the Gulf of Mexico and Caribbean Sea framework presents policy guidelines for regional marine and coastal zone integrated management (Secretariat of Environment and Natural Resources 2016a). Similar efforts exist for marine ecological planning in the Gulf of California (Secretariat of Environment and Natural Resources 2016b), the Northern Pacific (Secretariat of Environment and Natural Resources, 2023), and the South Central Pacific (Secretariat of Environment and Natural Resources 2019).
	Monaco	Monaco follows most rules of the EU but is not a member state. Policies on MSP relevant to restricted or protected marine areas exist (Ocean Energy Systems (OES) 2024).
	Singapore	Singapore's Maritime and Port Authority manages a national marine spatial data infrastructure program of Singapore's coastal waters and coast called GeoSpace-Sea (Fowler 2022)

		and has developed a Singapore Geospatial Master Plan, which was updated in 2024 (Geospatial Singapore 2024).
	US	<p>There is no formal, multi-sectoral MSP process that applies nationally.</p> <p>Some coastal states (i.e., Oregon, Massachusetts, Rhode Island, and Washington) enacted MSP to help guide use of ocean space through marine plans or MSP principles (Bates et al. 2018; Massachusetts Office of Coastal Zone Management 2024; McCann et al. 2010; Oregon Coastal Management Program 2023).</p> <p>Executive Order 13547 (2010) called for regional MSP across the US. Two plans were created in 2016: the Northeast Ocean Plan (Northeast Regional Planning Body 2016), and the Mid-Atlantic Regional Ocean Action Plan (Mid-Atlantic Regional Planning Body 2016).</p>

S6.2. References

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