



# FUTURE USES AND NEEDS OF THE SEAS

*Integration of climate-smart trends and new technologies in  
Maritime Spatial Planning*

STUDY RECAP



The European Union is committed to achieving climate neutrality by 2050 and fulfilling the Paris Agreement, through robust climate mitigation and adaptation measures. As the Triple Planetary Crisis of climate change, biodiversity loss, and pollution, intensifies, maritime spatial planning (MSP) has become critical for integrating emerging "green" maritime sectors, while protecting fragile marine ecosystems. The key challenge is managing increasingly crowded seas: EU Member States must accommodate over 300 GW of offshore wind energy by 2050 (equivalent to replacing all current EU coal power), develop emerging sectors, and adapt coasts to climate risks, all within marine and coastal areas already congested by shipping, tourism fishing, and other activities.

**This study assesses how European countries integrate climate-smart technologies and trends into their maritime plans to ensure a transition that is both effective and sustainable.**

The **North Sea** leads in offshore wind deployment (25 GW operational) and hosts multiple hydrogen and carbon capture pilots, positioning itself as Europe's "green power plant."



The **Baltic Sea** is rapidly scaling up, targeting 19.6 GW by 2030, while also addressing eutrophication issues and sustainable aquaculture.

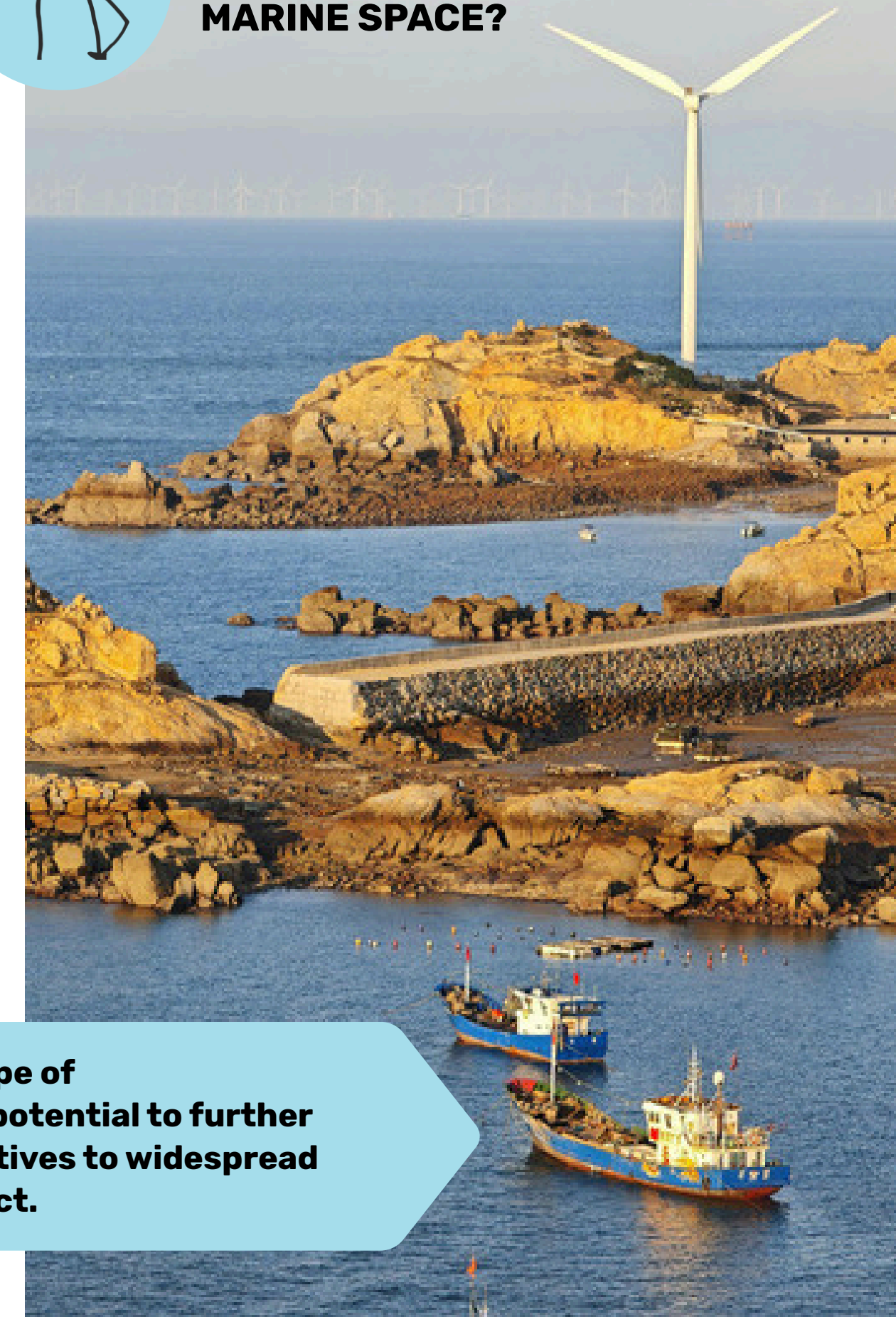
The **Black Sea**, in early development stages, focuses on ecosystem preservation alongside emerging offshore wind and aquaculture sectors.

The **Atlantic** is emerging as a significant player with 12-14 GW planned by 2030 and substantial wave and tidal energy potential.

The **Mediterranean**, vulnerable to water scarcity and coastal erosion, prioritises desalination powered by renewables and coastal adaptation strategies



**HOW DO WE FIT ALL THESE NEEDS INTO LIMITED MARINE SPACE?**



**EU Member States are progressing in integrating climate action into their MSPs, though the pace and scope of implementation vary. While significant strides have been made in mitigation, there remains considerable potential to further develop adaptation strategies. Additionally, the transition of climate-smart technologies from pilot initiatives to widespread adoption in mainstream MSP presents an important opportunity to enhance their effectiveness and impact.**

The way forward

## The way forward



Connect maritime spatial planning and climate technologies in one system to achieve optimum sustainable development of all emerging sectors and harmonise competing sectoral interests.

See ahead: use Digital Twin and emerging tech to plan maritime space with confidence and reinforce evidence-based MSP.



Work towards cross-sectoral cooperation for effective spatial management by aligning policies, digitalising systems and standardising practices.

Share knowledge and tech across sea basins: build capacity for climate-smart planning everywhere.



Make mitigation and adaptation work together: integrate both into maritime spatial planning to enhance synergies between climate actions.

Adopt adaptive maritime planning that evolves with climate trends and technological advances.



**Read the full study**

or access on <https://maritime-spatial-planning.ec.europa.eu/media/document/15331>



## WHY READ THIS STUDY NOW ?

The **European Ocean Pact** commits to strengthen the blue economy sectors while supporting the achievement of our energy and climate goals. This will require an improved regional cooperation and solutions for spatial constraints and co-existence between blue economy sectors. The **upcoming Ocean Act** will build on a revision of the MSP Directive and aim at strengthening and modernising maritime spatial planning as a strategic tool that will serve the priorities of the Ocean Pact and their implementation.

This study assesses, in each sea basin, how Member States are currently integrating climate mitigation and adaptation into maritime spatial planning. By identifying emerging practices alongside existing gaps, the study offers concrete insights to inform the development of the Ocean Act and strengthen the revision of the MSP Directive.

**The study shows that climate-smart spatial planning isn't an aspirational goal, but it's one of the fundamental prerequisites for effectively delivering on the Pact's six priorities.**