

# Guidelines for Planning “Offshore Renewable Energy go-to areas” (ORE go-to areas) in the Baltic Sea

UNDER THE AMENDED DIRECTIVE FOR RENEWABLE ENERGY AND THE REPOWER EU PLAN

Note: *DRAFT under development*

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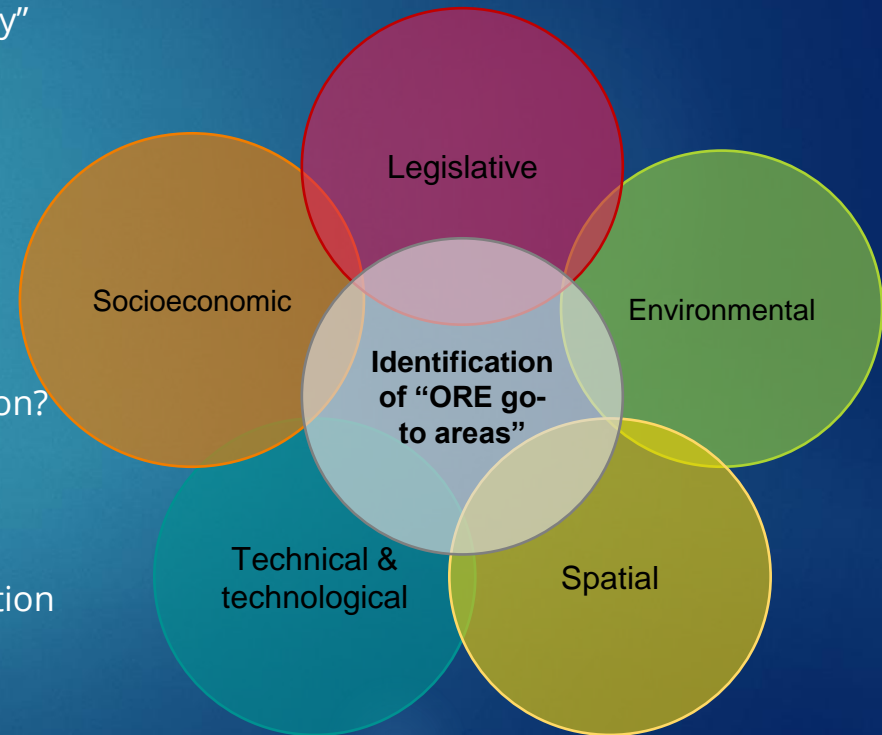


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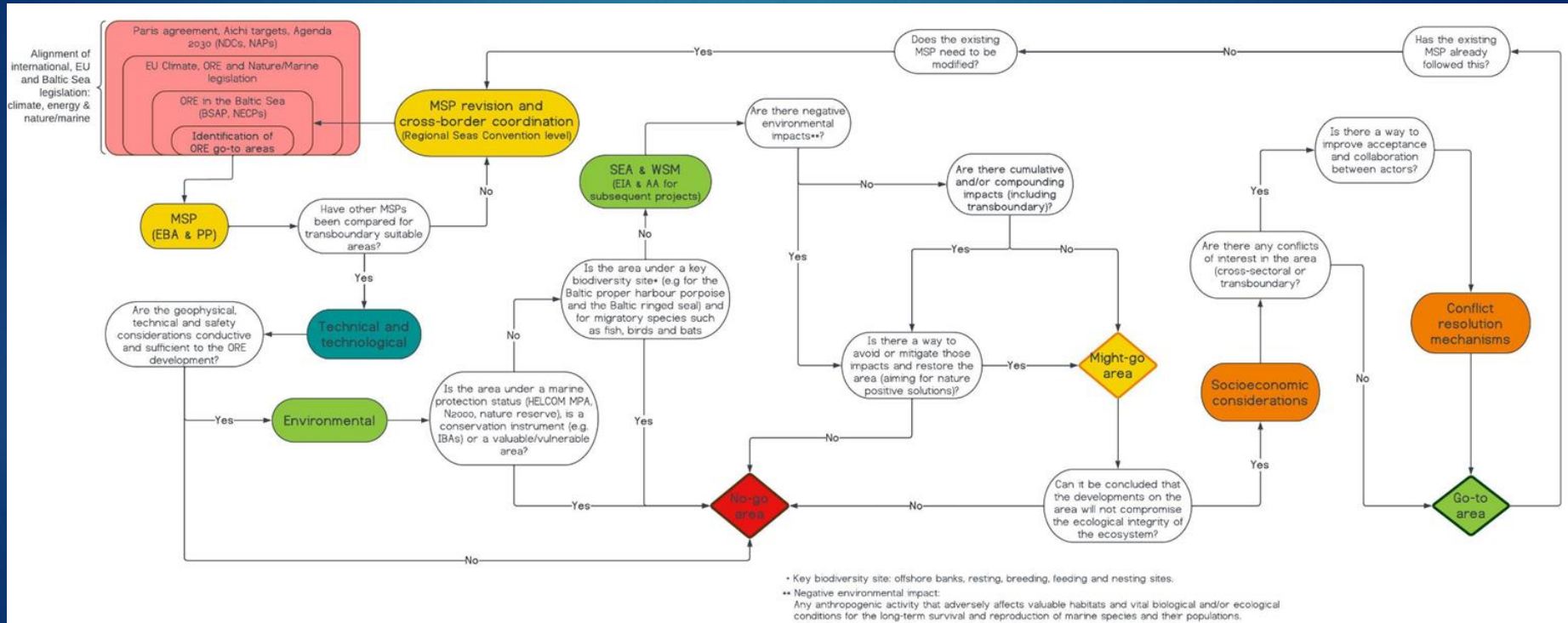
# Context, purpose and scope

- ▶ REPowerEU Plan and amendment of RED
  - ▶ “massive speed-up and scale-up in renewable energy”
  - ▶ Energy independence and security
  - ▶ Share from RES: **45% by 2030**
  - ▶ Identification of “go-to areas” for renewable energy
- ▶ Guidelines → How to do it?
  - ▶ Aligning climate, energy and nature/marine legislation?
  - ▶ Without negatively affecting nature
  - ▶ Without weakening/overlooking environmental requirements
  - ▶ Through transboundary and cross-sectoral cooperation and proper stakeholder engagement

Framework for identifying ORE go-to areas



# Decision tree



## Planning

- ✓ Alignment of climate, energy and nature goals and policies
- ✓ Ecosystem-based approach (EBA) and the precautionary principle (PP) as the basis for Maritime Spatial Planning (MSP)
- ✓ Awareness of geophysical characteristics, new technologies and existing infrastructure and new data
- ✓ Exclusion of:
  - ✓ MPAs (HELCOM, Natura 2000, nature reserves, etc.)
  - ✓ Conservation instruments (e.g. IBAs)
  - ✓ Valuable and vulnerable areas
  - ✓ Key biodiversity sites (resting, nesting, breeding, feeding, offshore banks) for harbour porpoises and migratory species – fish, birds and bats
- ✓ Promotion of nature-based solutions
- ✓ Use of latest available scientific data and tools through biodiversity funds for a nature positive ORE sector
- ✓ Best available environmental-friendly technology to avoid or reduce negative impacts to marine ecosystems
- ✓ Socio-economic considerations, including regional collaboration and stakeholder engagement
- ✓ Identification of possible transboundary and multi-use areas
- ✓ Adoption of Sustainable Blue Economy Principles (SBEP)

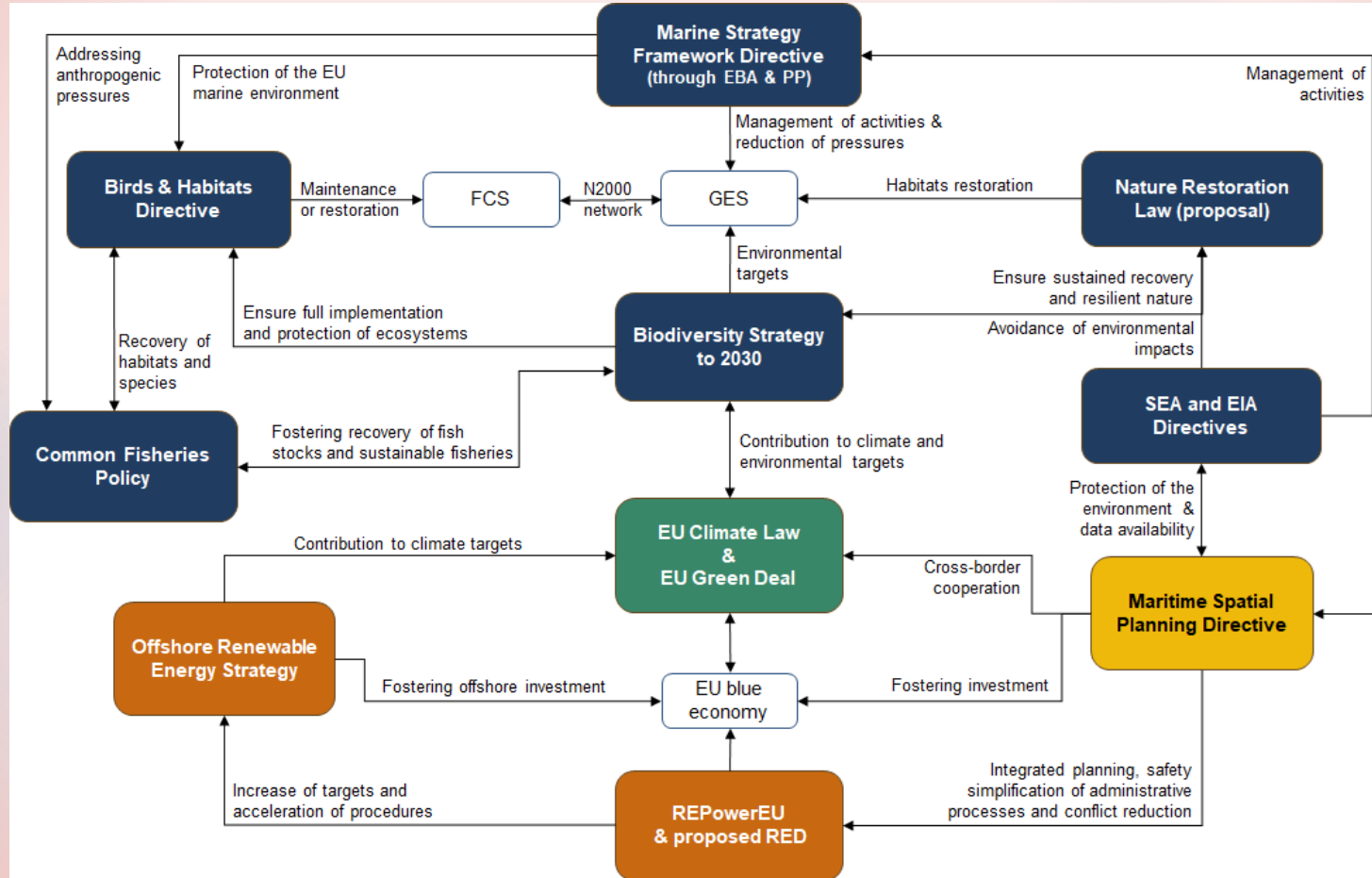
## Design and permitting

- ✓ Awareness and adaptive transboundary collaboration regarding environmental impacts in potential ORE go-to areas - during all the phases of the project's life cycle (development, construction, operation and decommissioning)
- ✓ Collaboration among Member States and sectors for environmental assessments with open, comprehensive and shareable data.
- ✓ Environmental Assessments (SEA, EIA, AA) and Wildlife Sensitivity Mapping, including cumulative and compounding impacts.
- ✓ Use of latest available scientific data and tools
- ✓ Identification of adaptive mitigation measures based on local needs – avoidance of negative impacts as the priority measure.
- ✓ Qualitative auctioning criteria to avoid unfair competition

## Project development & long-term vision

- ✓ Long-term considerations for ORE, environment and society
- ✓ Adaptive transboundary collaboration regarding environmental impacts (including cumulative and compounding) during all the phases of the project's life cycle
- ✓ Collection of open, comprehensive and shareable standardized data
- ✓ Management, monitoring and enforcement - coordinated with mitigation strategies
- ✓ Nature positive as a new normal for the ORE sector

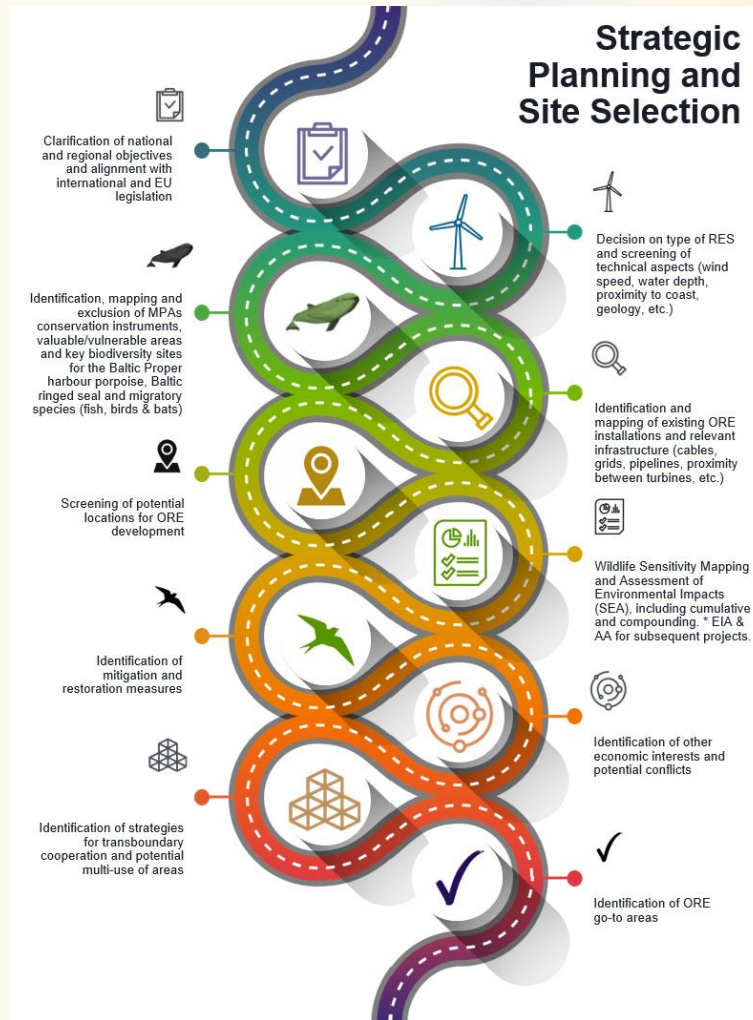
# Legislative





# Spatial

- How to identify ORE go-to areas?
- All elements of the framework
- Layering process
- Identification, mapping, inclusion or exclusion
- Integrated into MSP process



# Technical/Technological

## Legal considerations

- Established regional and national targets for ORE, legal definitions for interconnectivity and use of infrastructure.

## Geophysical characteristics

- Wind speed (strong and consistent), geology of the seabed (softer), water depth (20-100m), sea ice zones, water currents, wave height.

## Spatial and safety requirements

- Distance to shore, space between technologies, trajectories.

## Current and future infrastructure

- Port infrastructure (existing, construction and maintenance), construction assets, grid connections, installed capacity, pipelines, cables, storage availability.

## Available technologies

- Floating solar, wave energy, tidal energy, floating wind, offshore wind, associated technologies, etc.

## Building capacity and capabilities

- Energy demand, digital instruments and tools, knowledge and expertise, supply chain capabilities, investments, financial developments and cost-effective solutions.

## Environmental impacts

- From: type of technology chosen, infrastructure, trajectories and all different activities performed during the lifecycle of the chosen technology.

# Environmental

## Positive impacts from OWE



- +/- Properly allocated areas – avoidance of MPAs and overall negative environmental impacts.
- +/- Use of areas with low ecological value (e.g. dead zones)



- + Habitat creation and heterogeneity for colonisation, aggregation and refuge of benthic species - reef effects
- + Minimized pressure from fishing (e.g. bottom trawling) and shipping activities
- + Attraction effects\*



- + Residues from infrastructures – reef effects
- + Possible minimized pressure from fishing activities (e.g. bottom trawling) – if structures remain

### Development

### Construction

### Operation

### Decommissioning

- Light pollution and underwater noise from baseline studies
- Intensified ship traffic
- Use of valuable marine ecosystems – if not properly allocated
- Indirect effects from exclusion of other activities – increased pressure in other areas



## Negative impacts from OWE

- Habitat loss and physical damage of seabed
- Disturbance of species and reproduction periods
- Underwater noise (pile driving/piling and drilling) – most important risk for harbour porpoise, cod and herring
- Sedimentation and smothering
- Sediment spreading, turbidity
- Intensified ship traffic – transport of materials
- Water pollution, waste and dust
- Light pollution
- Soft bottom installations with larger impact



- Attraction effects – risk of bycatch, opportunistic and invasive species
- Risk of collision - sea birds, migratory birds, bats
- Underwater noise – vessels, generators and transmission systems
- Intensified ship traffic
- Light pollution – turbines and vessels
- Barrier effects, displacement and avoidance\* - birds and mammals
- Barotrauma – bats\*
- Hydrodynamic changes – turbidity and stratification\*
- Electromagnetic fields - fish larvae\*



- Underwater noise (from dismantling and transport)
- Intensified ship traffic
- Sediment spreading (minor than construction phase)
- Habitat loss – fauna established in structures and from attracted species
- Disturbance of species and reproduction periods
- Water pollution, waste, dust and light pollution



+ Cumulative and compounding impacts

## Box 2. Considerations for addressing cumulative and compounding impacts for the identification of ORE go-to areas and the deployment of ORE developments

- ❖ **Awareness, regard, and inclusion of cumulative and compounding effects** from intensified and more recurrent developments (due to accelerated deployment and shortened permitting processes), along with diverse related activities during different phases of the projects.
- ❖ **Addressing challenges for cumulative and compounding impacts on:** migratory routes (mammals, birds, and bats), avoidance and displacement of species, underwater noise, cable laying and habitat loss, disturbance and fragmentation with consequences on seabed integrity.
- ❖ **Strategic planning** through MSPs, use of Wildlife Sensitivity Mapping and execution of Environmental Assessments (SEAs, EIAs and AAs) to avoid cumulative and compounding effects on habitats and species.
- ❖ **Use and development of frameworks** for the assessment of cumulative impacts.
- ❖ **Coordination** between Member States and sectors for **cohesive surveying, monitoring and collection of standardized and open data** to tackle uncertainty.
- ❖ Consideration of **impacts from past** (historical data allocated within spatial data), **present**, and, to a possible extent, forecasted **future developments**.
- ❖ Consideration of **ORE activities interacting with other sectors** within the potential ORE go-to area.
- ❖ Consideration of **transboundary and regional effects**, as well as **future changes in the environment**, for example, due to climate change.
- ❖ For challenges regarding uncertainty and lack of data, the **precautionary principle** should be applied **before** the designation of ORE go-to areas and the deployment of projects (following the MSPD).

## Impacts on habitats and species + cumulative and compounding impacts

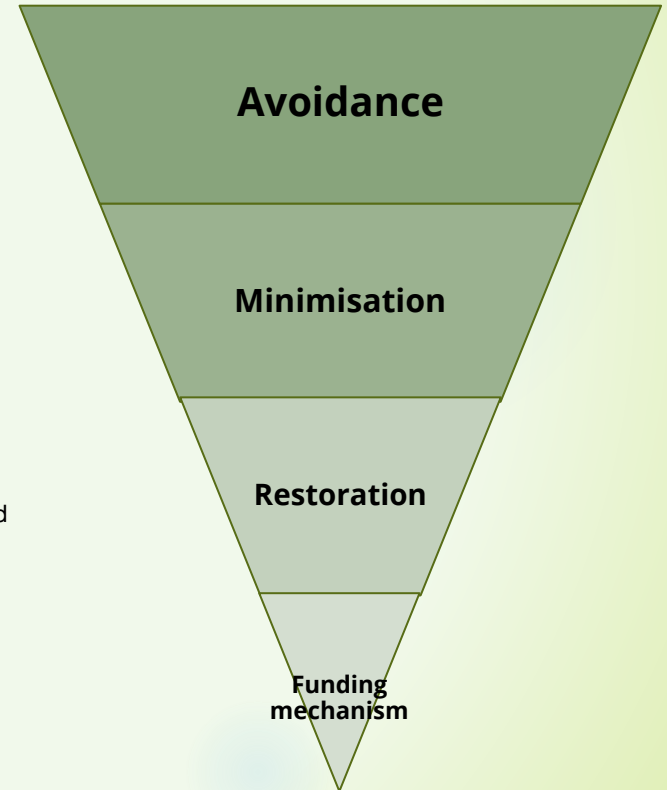
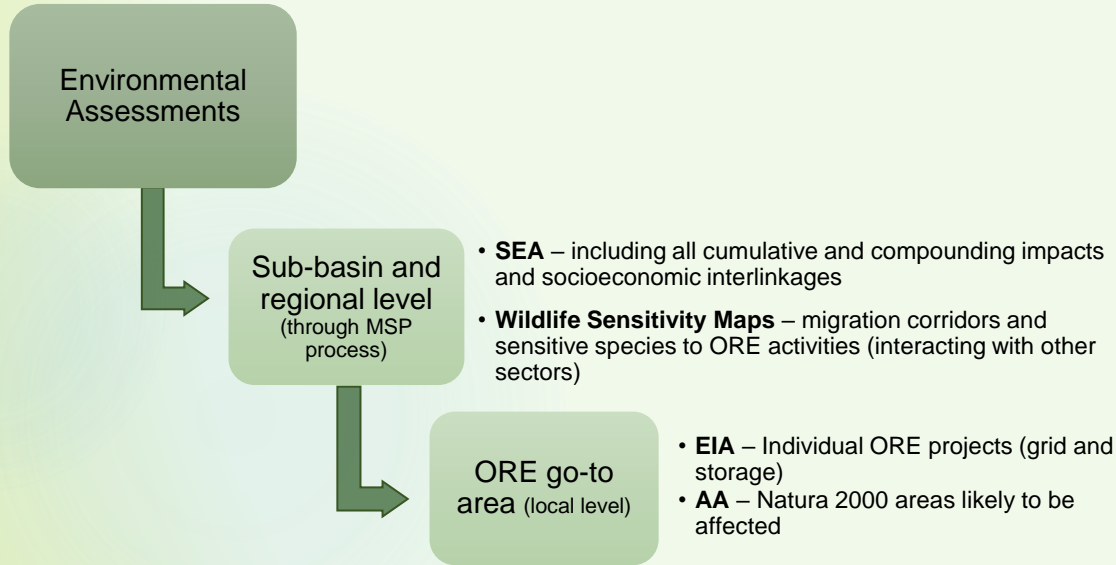
Marine protection – exclusion of MPAs, N2000, etc

Environmental Assessments: SEAs, WSM, EIAs, AAs.

Mitigation strategies (hierarchy)



# Environmental assessments and mitigation strategies



# Socioeconomic

## Joint actions and conflicts of interest

- Joint declaration ➔ joint action
- Transboundary and multi-use areas
- Depending on national legal framework and local conditions

## Overriding public interest

- Negative repercussions in trust and acceptance
- Challenges in court for environmental purposes
- Lack of cooperation and engagement
- Conflicts of interest

## Conflict resolution mechanisms for a sustainable blue economy

- Early Identification, involvement and consultation of stakeholders
- Adaptive compensation measures (if applicable and justified)
- Sustainable financing, business ethics

## Stakeholder engagement, knowledge and capacity

- Strong and adaptive stakeholder network
- Common understanding, sufficient knowledge and capacity
- Striving towards management, monitoring and enforcement of conservation strategies and sustainable development

# Socioeconomic

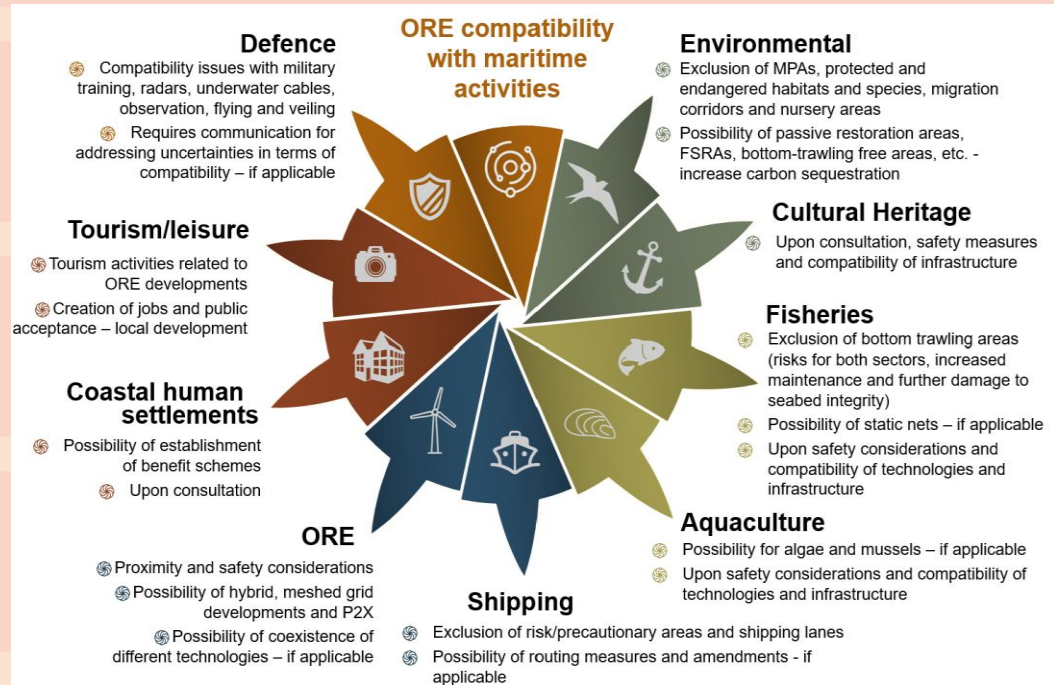
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# Socioeconomic

Joint actions and conflicts of interest

Overriding public interest

Conflict resolution mechanisms for a sustainable blue economy

Stakeholder engagement, knowledge and capacity

## Benefits

- » Decarbonisation
- » Reduction of GHGs
- » Independence
- » Energy security
- » Climate and energy targets

## Opportunities

- » Nature positive ORE sector
- » Mitigation measures
- » Collaborative MSP process
- » Knowledge development
- » Transboundary and multi-use areas
- » New technologies
- » Better interconnected infrastructure
- » Shared and comprehensive data

## Challenges

- » Site availability and grid capacity
- » Stakeholder engagement
- » Divergent interests between maritime sectors
- » Trust and acceptance
- » Financial support
- » Duration and complexity of permitting procedures
- » Lack of data and uncertainty
- » Supply chain

## Conflicts

- » Negative environmental impacts (including cumulative & compounding)
- » Displacement and adverse effects on other maritime activities
- » Pressure on ecosystems and other economic activities
- » Adverse effects on local coastal communities

- Strong and adaptive stakeholder network
- Common understanding, sufficient knowledge and capacity
- Striving towards management, monitoring and enforcement of conservation strategies and sustainable development

# Key considerations

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Certain “no-go” areas – MPAs and key biodiversity sites

EIAs are a useful tool – mitigation strategy and stakeholder consultation

How to address cumulative and compounding impacts?

Transboundary coordination and planning must be improved and aligned

How to ensure available, standardized data and monitoring?

Suitable funding mechanisms should be put in place

A need for a Baltic Sea platform for dialogue?



# Concluding remarks

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Acceleration and expansion of RES - necessary

Other efforts - energy savings, efficiency and repowering □ alleviate pressures on ORE sector and marine environment

Not only benefits from ORE - climate change at expense of biodiversity loss?

Important role of the oceans and marine biodiversity on climate mitigation

Human activities and biodiversity depend on healthy marine ecosystems

Responsible acceleration of ORE – guidelines can serve as inspiration

Prosperity, conservation and recovery of marine ecosystems

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Thank you for listening.  
Questions?

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