Assessment of potential employment, skills and social implications of ORE development in the EU

Meeting of the Pelagic Advisory Council

25 March 2026

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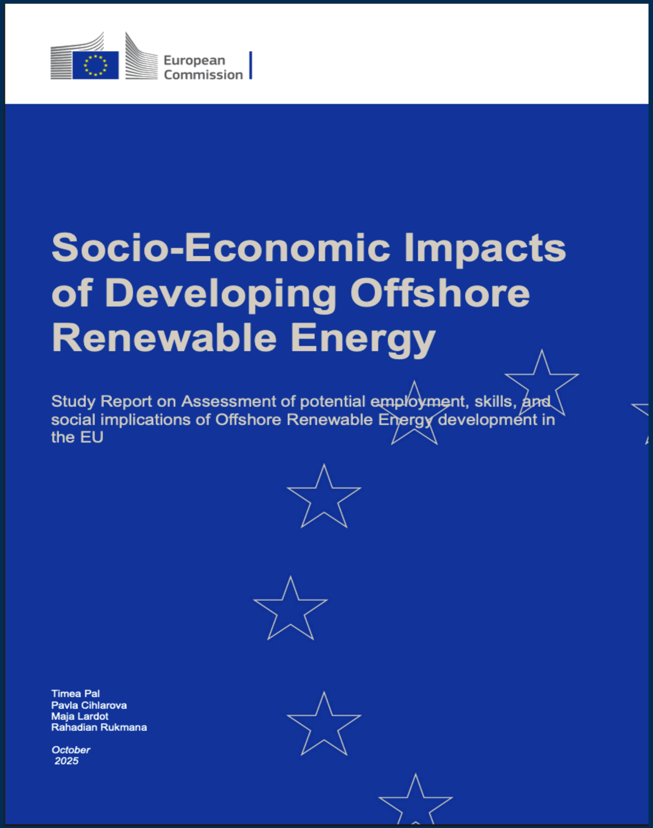

European Commission

Socio-Economic Impacts of Developing Offshore Renewable Energy

Study Report on Assessment of potential employment, skills, and social implications of Offshore Renewable Energy development in the EU

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October 2025

Analytical framework

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Overall Approach

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Scoping analysis → Development of analytical framework → Data collection and analysis → Assessment of findings and recommendations

Impact areas

Analytical framework per impact area:

- Expected nature and direction of impact
- Sectors of interest
- ORE phase
- Affected stakeholders and vulnerable groups
- Indicators and sources of data
- Level and methods of analysis

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Identified impacts on fishing stocks

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Fishing resources

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Uncertain overall impact on fishing resources

Changes in marine species composition and abundance

Difficulty in monitoring impact on fisheries

Cumulative effects difficult to assess

Long term impact unclear

Short term impact on ability to fish

ORE recent phenomenon

Diverging monitoring methods

Difficult to isolate impact of ORE in marine environment

Impact of one offshore wind farm different from several

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Identified impacts on economic aspects

Economic impact

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Offshore renewables deliver significant EU-wide value, but sectoral and regional impacts diverge.

- €113 bn GDP contribution by 2030 projected (REPowerEU); ocean energy holds potential up to €5.8 bn by 2030
- Sectoral effects vary - ports benefit, fishers face access restrictions, tourism neutral to positive
- Local economies experience diverging outcomes based on activity mix and phase

Fishing sector: Limited space, limited options

ORE restricts access to key fishing grounds - especially for bottom-contact gear

Adaptation constrained by licensing burden, low financing confidence

Relocation creates conflict and overfishing pressure in alternative zones

Limited financing: banks hesitant to lend to a declining or uncertain sector

Few compensation mechanisms; multi-use models (e.g. Passive gear in wind farms) are still niche

DE: 10% of North Sea already allocated to wind farms; fishers locked out of MSP decisions

NL: €5.5M annual loss projected for cutters in full build-out

PL: rerouting costs add €220,000/year to Ustka vessels

Ports & Logistics: Clear economic winners, but benefits vary

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Ports serve as construction, assembly, and O&M bases for offshore wind - generating steady economic returns

High job creation in leading ports (e.g. Bremerhaven, Cuxhaven, Rostock, Saint-Nazaire)

Infrastructure investments support new supply chain roles (nacelles, blades, substations)

Smaller fishing- or tourism-reliant ports may see limited direct benefit

DE: Bremerhaven created ~3,000 jobs; Cuxhaven added 1,000 via Siemens Gamesa

FR: Pays de la Loire received 70% of national offshore wind investment in 2023

PL: €771 million in added value to Pomeranian ports

Risks identified

Marine space use & spatial conflicts

- Offshore renewables reduce access to fishing grounds, especially for bottom trawlers
- Safety zones and infrastructure (cables, substations) create new navigational barriers
- Fishers relocating to new areas can lead to overfishing and inter-fleet conflicts

Disproportionate impacts on local economies

- Local impacts often obscured by national-level assessments
- Post-construction phase brings reduced economic activity in non-O&M regions
- Smaller ports and fishing towns risk being left out of ORE value chains

Adaptation & financing constraints in fisheries

- Fishers face technical, regulatory, and financial barriers to gear/vessel adaptation
- Licensing complexity and administrative burden discourage innovation
- Financing access is limited due to sectoral uncertainty; few viable credit options

Identified impacts on employment and skills

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Level of employment

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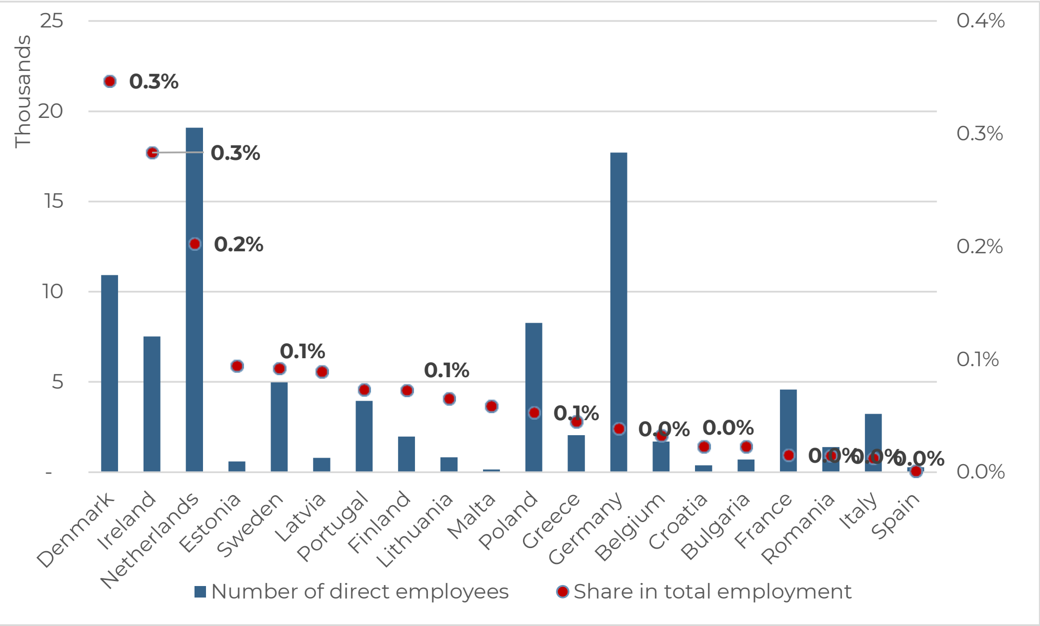
- **Creation of new employment opportunities in the ORE sector** and beyond (approx. 0.1% in total EU employment)
- Employment intensity and indirect job creation is expected **to decline over time** due mainly to technological developments
- Employment creation in the **proximity of OWF sites seems limited**
- **Not able to comprehensively assess potential employment impacts on fishers (not much research available)**

Table 1: Direct and indirect jobs estimated in offshore wind energy in the EU

	2030		2040		2050	
	Nr	%	Nr	%	Nr	%
Total direct	91,026	51%	94,751	70%	98,439	81%
Total indirect	88,346	49%	41,150	30%	22,420	19%
Total	**179,372**	**100%**	**135,901**	**100%**	**120,860**	**100%**

Figure 1 Estimations of direct employment in EU member states for year 2030



Sources: consultant calculations, with adjusted methodology from WindEurope.

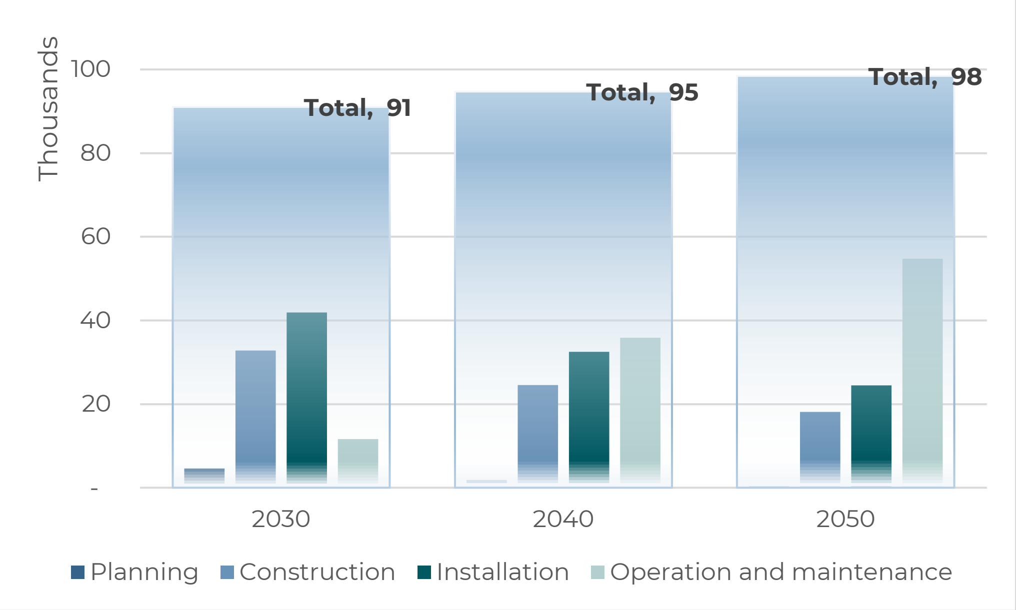
Quality of employment

Overall, **quality of employment in renewable energy sectors is generally higher than the overall economy** but important caveats:

- (+) High wages and benefits, mainly full-time and permanent positions and stability
- (+) Some improvement over time as the sector matures
- (+) Predominant part of jobs are in operation and maintenance

- (-) New jobs created are often temporary (planning, construction and installation)
- (-) Difficult working conditions, with health and safety concerns
- (-) Low share of women employees
- (-) Low union representation
- (-) Reliance on international recruitment practices

Figure 1 Estimation of number of employees in the EU by year and ORE phases



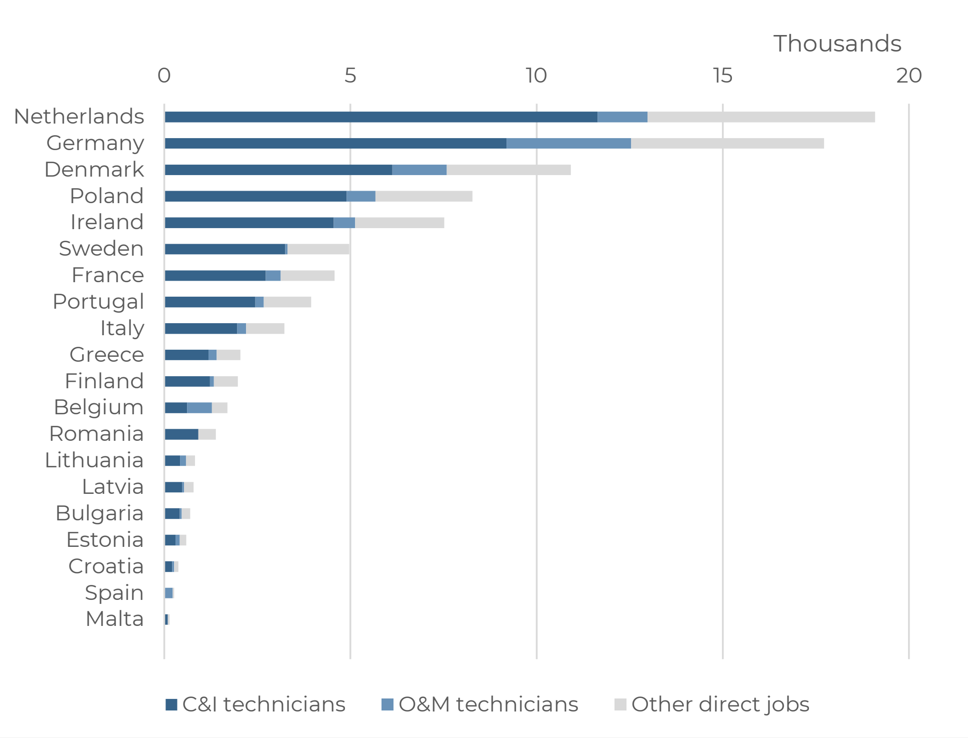
Source: consultant calculations, with adjusted methodology from WindEurope.

Skills

Expansion of ORE requires significant number of skilled employees and training related investments

- Occupations related to ORE deployment are often occupations that require **post-secondary education** (even for technicians)
- Approximately **70% of the total number of direct jobs created are technicians**
- **Training initiatives** launched in most member states, but there is need for further tailoring to ORE needs, scaling up, flexibility and standardisation
- Need for further investigation regarding the **feasibility of re/upskilling of fishers for ORE deployment (several barriers exist)**

Figure 1 Estimated number of technicians in 2030 per member state and ORE phase



Source: consultant calculations, with adjusted methodology from WindEurope.

Risks identified

Employment level:

- Employment creation potential of ORE will slow down over time due to technological advancements
- Employment creation in the proximity of ORE sites too limited to bring local benefits and facilitate social acceptance
- ORE creates limited new employment opportunities for fishers; employment diversification further challenged by cultural, economic and other factors

Quality of employment:

- New employment opportunities are often temporary in nature (especially during planning, construction and installation)
- Risk of low collective representation of workers in ORE, potentially threatening quality of employment for low to medium skilled employees; low participation rate by women

Skills:

- Potential shortages in the supply of adequately skilled workforce (EU, France, Netherlands, PT)
- Re/upskilling training efforts might not be sufficient or adequate to meet the needs of ORE expansion
- Costs of re/upskilling (e.g. the UK) or of economic diversification (e.g. license changes for fishers Ireland) placing a significant burden on workers

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Other impacts

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Other impacts

- **New tourism products** have emerged: boat tours, info centres, guided walks
- Risk remains in highly tourism-dependent coastal towns, especially if onshore infrastructure is poorly planned
- ORE's **construction phase boosts local economies** - but benefits may fade over time
- **Public perception generally positive**, especially when climate benefits are communicated
- **Opposition from local population** of coastal towns due to fear of destruction of ecosystems, landscape disturbances, disruption of tourism or negative impacts on human health
- Negative perception from fishers due to limitations of traditional fishing grounds – **ORE is perceived as prioritisation over fisheries sector**

Recommendations to address information gaps and risks identified

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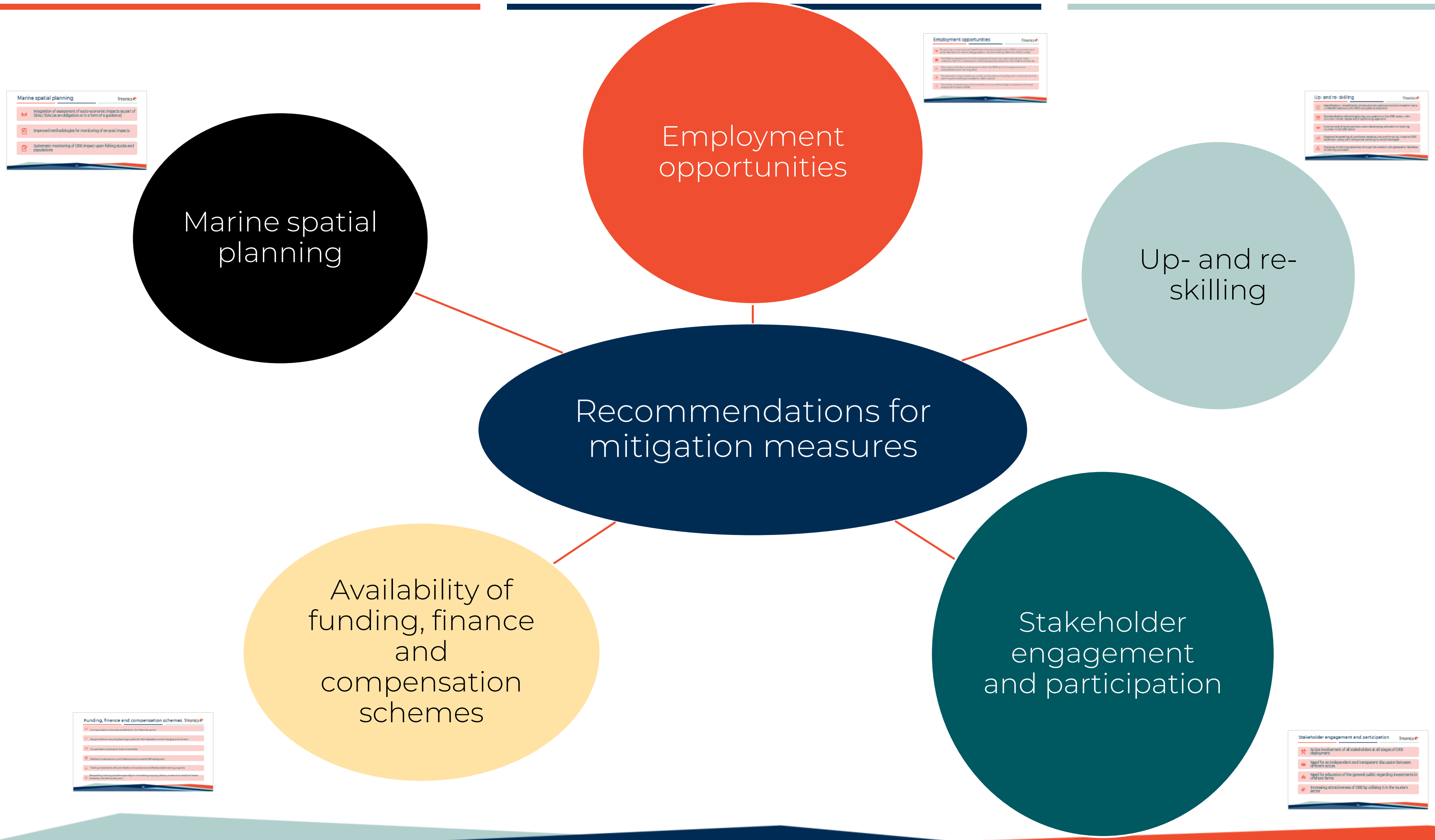
Recommendations on how to migitate the identified risks



Marine spatial planning

Integration of assessment of socio-economic impacts as part of SEAs / EIAs (as an obligation or in a form of a guidance)

Improved methodologies for monitoring of ex-post impacts

Systematic monitoring of ORE impact upon fishing stocks and populations

Employment opportunities

- Developing a cross-sectoral classification framework tailored to ORE for economic and social data (would require disaggregation of some existing NACE and ESCO codes)
- Facilitating assessment of local employment impact through regional-level data collection (NUTS 3 or below) and methodological guidance for both ORE and fisheries
- Ensuring continuity in employment within the ORE sector through economic diversification and training plans
- Consideration of job residency, workforce diversity and employment continuity into the planning and bidding processes for ORE projects
- Promoting transparency and harmonisation across methodologies to assess and forecast employment impact of ORE

Up- and re- skilling

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- Identification / classification of relevant occupations and skills creation into a unified EU taxonomy for ORE occupations and skills
- Standardisation of training for key occupations in the ORE sector, with inclusion of soft, digital and English language skills
- Involvement of social partners when developing education or training courses in the ORE sector.
- Regional forecasting of workforce needs by role and timeline, linked to ORE expansion plans, permitting and licensing, to avoid shortages
- Mapping of training capacities through the creation of a geospatial database of training providers

Stakeholder engagement and participation

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- Active involvement of all stakeholders at all stages of ORE deployment
- Need for an independent and transparent discussion between different actors
- Need for education of the general public regarding investments in offshore farms
- Increasing attractiveness of ORE by utilising it in the tourism sector

Funding, finance and compensation schemes

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- Compensation schemes available for the fisheries sector
- Support fishers in securing financing to allow for their adaptation to the changing environment
- Compensation schemes to local communities
- Sufficient investments in port infrastructures to enable ORE deployment
- Training investments with prioritization of modular and certified/portable training programs
- Re/upskilling training subsidies especially for vulnerable groups (e.g. fishers, workers from fossil fuel-based industries, low-skill workers, etc.)

Thank you for your attention, please contact us for more information

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