UNESCO OCEAN DECADE 2021 - 2030

Challenge 4 & Ocean-H2: Building a Sustainable Ocean Economy

How offshore **hydrogen**, marine energy, and blue infrastructure align with the global mission for a fair and innovative **ocean** economy?

PILLAR 1

🎯 Objectives

Challenge 4 of Ocean Decade 2021-2030 demands a shift from extractive ocean use to a **knowledge-driven, equitable, and innovation-led** model. Six core goals frame this transformation.

Knowledge-Driven Economy

Open data, digital twins, evidence-based decisions for offshore hydrogen planning

Equity & Inclusion

FPIC, fair benefit-sharing, and coastal community participation

Multi-Sector Partnerships

Ports, energy firms, academia, local communities, private sectors and local authorities collaborating on H_2 corridors

Just Finance

A range of finance mechanisms, including blue bonds, parametric insurance and ocean-based blended finance vehicles are currently being explored and implemented globally

Appropriate Innovation

Generating knowledge, supporting innovation, and developing scalable solutions for equitable and sustainable development of the ocean economy amidst changing environmental, social, and climate conditions, while recognising and supporting existing good practices and solutions

Capacity Building

Training, institutional strengthening, and international knowledge exchange

⚠ PILLAR 2

⚙️ Technical Constraints

Six structural barriers challenge both the ocean economy and offshore hydrogen deployment.

📊 Data Gaps

Fragmented, non-interoperable datasets block planning and environmental assessment

🌊 Ocean Complexity

The ocean's vastness and unique characteristics present distinct challenges in achieving sustainable growth, equity, and environmental protection

🏛️ Fragmented Governance

Overlapping jurisdictions and Institutional inefficiencies complicate international collaboration and data gathering

💰 Financial Risk

The benefits from economic growth are not equitably distributed and financial mechanisms remain insufficient.

👥 Social Inequity

Communities are underrepresented and the access to ocean resources as well as the exposure to the benefits and harms are also not equally distributed

🔬 Tech Gaps

Critical gaps in science and knowledge and solutions not always scalable, affordable, or adapted to local marine conditions

PILLAR 3

Possible Solutions

Challenge 4 outlines actionable responses – each directly applicable to **Ocean-H2 operations and strategy**.

Integrated Knowledge Systems

Priority datasets ensuring stakeholder and rights holder engagement in data capture and knowledge co-production

Stronger Governance

Comprehensive policies and governance frameworks such as sustainable ocean plans

Low-Impact Technologies

Integration of appropriate technology and innovation to support a sustainable, equitable, and resilient ocean economy

💶 Just Finance

Blue bonds, parametric insurance, blended finance vehicles.

🤝 Community Empowerment

Investment in context-specific education, training, and research programs

🔬 Applied R&D

Adequate investment in context specific, culturally adequate education, training, and research programmes is crucial

PILLAR 4

🕐 Timing: Key Milestones to 2030

A phased roadmap aligned with the UNESCO Ocean Decade – reframed for **Ocean-H2 deployment**.

1

2025 — Data & Accessibility

Enhance the integration and accessibility of priority datasets

2

2027 — Capacity & Participation

Implement capacity-development initiatives that empower stakeholders

3

2028 — Governance & Policy

Develop and adopt sustainable policy frameworks and governance mechanisms

4

2029 — Inclusive Engagement

Ensure inclusive and meaningful stakeholder engagement

5

2030 — Finance & Scale-Up

Mobilise and increase funding dedicated to supporting sustainable and equitable ocean economy initiatives

OCEAN-H2 × UNESCO OCEAN DECADE

Ready to Dive Deeper?

This carousel summarises the **Challenge 4 White Paper** through the lens of Ocean-H2 project. Explore the full framework to align your projects and ideas with the ocean economy of 2030.

📄 Read the White Paper

Access the full UNESCO Ocean Decade Challenge 4 document for detailed guidance.

www.oceandecade.org

🔗 Follow Ocean-H2

Stay updated on European offshore hydrogen innovation and marine energy progress.

www.oceanh2.eu

💬 Share & Discuss

Tag a colleague in offshore energy, marine policy, or blue economy – start the conversation.