

Environmental Management System (EMS) Manual

Subsea Engineering • 3D Scanning • General Engineering & Manufacturing

Aligned with ISO 14001:2026

1. Purpose & Scope

This Environmental Management System (EMS) defines how the organisation manages environmental responsibilities across:

- Subsea engineering (design, testing, offshore deployment, intervention, decommissioning)
- 3D scanning and digital modelling
- General engineering and manufacturing (fabrication, machining, assembly, testing)

The EMS applies to all personnel, contractors, suppliers, and project partners.

2. Organisational Context

2.1 Internal & External Issues

Internal: engineering workflows, manufacturing processes, vessel operations, scanning equipment, chemical use, waste streams.

External: regulatory requirements, client expectations, supply chain environmental performance, ecological sensitivity.

2.2 Interested Parties

Clients, regulators (BEIS/OPRED, HSE, EA, MMO), classification societies (DNV, ABS), vessel operators, local communities, employees, contractors.

2.3 EMS Boundaries

Covers design, scanning, manufacturing, offshore mobilisation, installation, intervention, demobilisation, waste handling, and lifecycle considerations.

3. Leadership

3.1 Environmental Policy

The organisation commits to:

- Pollution prevention
- Protection of marine and terrestrial environments
- Compliance with legal and client requirements
- Efficient use of energy and materials
- Continual improvement

3.2 Roles & Responsibilities

- Managing Director – ultimate accountability
 - Environmental Manager – EMS implementation and compliance
 - Project Managers – project-specific environmental controls
 - Workshop Leads / Offshore Supervisors – operational compliance
 - All Personnel – adherence to environmental procedures
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4. Planning

4.1 Environmental Aspects & Impacts

Subsea Engineering

Vessel emissions, subsea noise, seabed disturbance, chemical use, spill risk, offshore waste.

3D Scanning

Power consumption, travel emissions, electronic waste, data-processing energy.

Manufacturing

Energy use, process emissions, chemical storage, waste streams, noise, dust, effluent.

Significance assessed by severity, frequency, regulatory exposure, stakeholder sensitivity, reversibility.

4.2 Compliance Obligations

ISO 14001, UK Environmental Protection Act, MARPOL Annex I/IV/V, OSPAR Decision 98/3, waste regulations, client standards, local permits.

4.3 Environmental Objectives

Examples:

- Reduce vessel fuel burn by $\geq 10\%$
- Zero unplanned discharges offshore
- Reduce workshop energy use by $\geq 5\%$ annually
- 100% compliant waste segregation
- Reduce scanning-related travel emissions

Objectives include KPIs, responsibilities, timelines, verification methods.

5. Support

5.1 Resources

Environmental Manager, training programmes, spill kits, containment systems, waste segregation infrastructure, vessel environmental equipment, document control system.

5.2 Competence & Training

Environmental awareness, spill response, waste handling, chemical management, offshore briefings, workshop controls, efficient scanning equipment use.

5.3 Communication

Internal: toolbox talks, briefings, dashboards.

External: client reporting, regulator notifications, incident reports.

5.4 Documented Information

Controlled documents include EMS Manual, Aspect Register, Legal Register, Waste Logs, Vessel Records, Emergency Plans, Audit Reports, Management Review Minutes.

6. Operation

6.1 Operational Planning & Control

Subsea Engineering

Fuel optimisation, MARPOL compliance, noise mitigation, seabed protection, approved chemicals, offshore waste management, contractor controls.

3D Scanning

Efficient travel planning, low-energy equipment, e-waste disposal, safe chemical use.

Manufacturing

Energy-efficient machinery, dust/noise control, chemical storage, waste segregation, effluent control, preventive maintenance.

6.2 Emergency Preparedness & Response

Spill response, vessel emergency procedures, subsea equipment failure scenarios, workshop fire/chemical spill response, regular drills.

7. Performance Evaluation

7.1 Monitoring & Measurement

Fuel burn, emissions, waste volumes, segregation accuracy, chemical usage, compliance status, environmental incidents.

7.2 Internal Audit

Annual EMS audit, project audits, workshop audits, supplier audits.

7.3 Management Review

Leadership reviews performance trends, audit results, compliance, risks, opportunities, resource needs, improvement actions.

8. Improvement

8.1 Nonconformity & Corrective Action

Incident reporting, root-cause analysis, corrective actions, effectiveness checks, procedure updates.

8.2 Continual Improvement

Technology upgrades, process optimisation, waste reduction, energy efficiency programmes, lessons learned.

Annexes (Optional for Full Certification)

A. Aspect & Impact Register B. Legal Register C. Objectives & KPI Matrix D. Operational Control Procedures E. Emergency Response Plans F. Audit Programme G. Management Review Template H. Continual Improvement Log I. Project-Specific EMS J. Tender-Ready Environmental Plan