PO483

Breathing life into HSE management systems – how do we make them meaningful to our workforce and contractors?

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Achieving effective HSE compliance in the wind energy sector necessitates the integration of HSE considerations into business processes throughout the entire life cycle. HSE management systems facilitate the realization of HSE commitments, enhance performance and efficiency, and promote proactive compliance. Robust management of contractors and sub-contractors is essential in an industry marked by the participation of multiple companies in the ownership, construction, operation, and maintenance of assets.

Summary

- HSE management systems are powerful tools when tailored to organisational needs and when built together with business stakeholders.
- Management systems shall integrate HSE into the full asset lifecycle and bolster operations, contractor management, and compliance.
- Effective management systems reflect legal, corporate and investors' requirements and should be established before construction begins.
- Management systems transform companies from reactively fixing deviations to proactive HSE performance management and improvement.

Challenges – Why?

The wind industry faces significant HSE challenges due to

- geographically dispersed operations,
- extensive use of (sub-)contractors, and
- the rapid growth of smaller companies transitioning from developers to operators.

Key issues include

- limited internal HSE resources,
- low awareness of country-specific requirements,
- recurring contractor non-compliance, and
- a reactive approach to fixing breaches.

EHS Considerations Across an Asset's Lifecycle Complementing EHS Studies and Permitting – What?

Early Stage – Governance Foundation

The EHS management system establishes organisational commitments, regulatory pathways, and baseline processes. It provides the governance structure that guides early decisions and prepares the organisation for compliant project development.

Development: Due Diligence & Planning – Risk Screening

During site evaluation, the EHS management system defines environmental and safety constraints, informs feasibility decisions, and sets the strategic direction for project-level EHS frameworks.
Its role is to ensure risk-aware, regulation-aligned project planning.

Development: Design & Fabrication – Design-Integrated Assurance

In the design phase, the EHS system embeds safety and environmental requirements into engineering solutions and supply-chain processes.
It ensures that specifications, supplier practices, and risk assessments support safe and compliant project execution.

Construction – Operational Risk Control

During construction, the EHS system provides real-time oversight through audits, inspections, and contractor management. It is the core mechanism for ensuring safe practices, environmental protection, and regulatory compliance on an active worksite.

Operation – Continuous Risk & Performance Management

Once operational, the EHS system supports ongoing monitoring, training, and management of change. It enables continuous risk control, compliance assurance, and performance optimisation throughout the asset's lifetime.

Decommissioning – Safe End-of-Life Execution

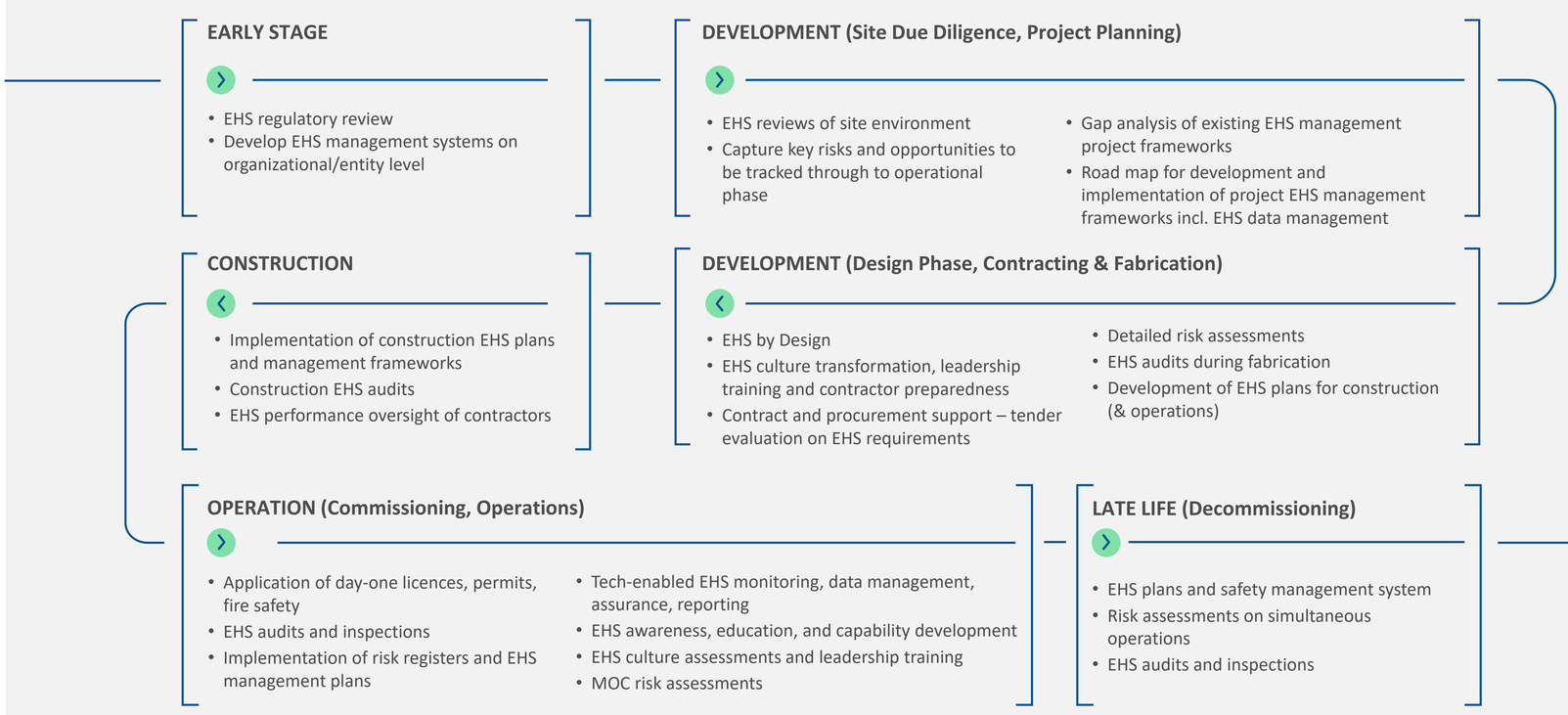
In late life, the EHS system guides safe dismantling, hazardous material handling, and interaction of simultaneous activities. It ensures responsible, low-impact, and compliant retirement of renewable-energy assets.

Success Factors – How?

Based on interviews with HSE and Operations Leads across the renewables industry as well as with the insights from pilot projects success factors for effective and efficient HSE management systems were identified.

HSE management system are successful when:

- they are integrated into existing structures and processes
- they provide clarity around responsibilities and timing, offer practical guidance that supports sound decision-making, and are reinforced through training, coaching, and culture-building
- they are created with close involvement from their users



Flowchart 1 - EHS Considerations Across an Asset's Lifecycle Complementing EHS Studies and Permitting