REGULATORY RECONFIGURATIONS FOR THE DESIGN OF A ROBUST UK OFFSHORE WIND HEALTH AND SAFETY RISK GOVERNANCE REGIME

INTRODUCTION

The offshore wind energy industry in the UK and around the world is growing at an encouraging rate. While there is a vast amount of research on the planning and environmental risks, there is limited research on the legal strategies for mitigating the occupational health and safety risks associated with offshore wind energy throughout its lifecycle. More particularly, there is contention and uncertainty associated with transplanting the offshore oil and gas regulatory strategy to the offshore wind energy industry. The most popular argument against this is that both industries are different, particularly because of the volatility of petroleum whereas wind generation is not, and therefore they should be regulated differently. Utilising a functional comparative analysis, this research makes a compelling argument that both offshore energy industries are remarkably similar, and should be regulated using the safety case model.

istock, credit: BerndBrueggemann)
North Sea Coast and wind turbines in Redcar, Redcar and Cleverland, Uk

Offshore Wind Health and Safety Related Challenges

- Increase in health and safety incidents
- Skills gap
- Poor safety culture
- Weak risk governance/regulatory regime
- Insufficient funding and capacity
- Inconsistent safety data
- Denial and benignity

Current Regulatory Regime

- Health and Safety at Work etc. Act 1974 is the principal regulation.

Section 2 general duty:

- "it shall be the duty of every employer to ensure, so far as is reasonably practicable, the health, safety and welfare at work of all employees". Supported by Other Regulations
- The UK Merchant shipping Reg
- The Management of H&S at Work Regulation 1999
- Construction Design and Management Reg. 2015
- Reporting Industrial Diseases and Dangerous Occurrences 2013
- Provision of Use of Work Equipment Reg 1998

Regulatory Gaps

- Transplantation of onshore regulations offshore without critical modifications especially when there are higher Health and Safety risks offshore. Health and Safety at Work etc. Act 1974 (Application outside Great Britain) Order 2013.
- Absence of sufficient regulatory safeguards; Permit regime, Independent verification, Auditing, Regular review
- Fragmented and complex
- Under resourced regulator

Hazard	Relative Risk (Wind vs Oil and Gas)	Comments
Electrical injury	Higher	Higher-voltage equipment and all activities related to this equipment.
Personnel transfers	Higher	More boat transfers expected for a worker on offshore wind turbines. Oil and gas platform boat landings and helipads are larger than those for wind monopoles. Helicopters are used more often for oil and gas.
Awkward postures	Higher	Generally, more room to perform tasks is available on oil and gas platforms.
Confined space entry	Similar	Wind turbines have more confined spaces and must be entered more frequently; regardless, confined space entry for both oil and gas and offshore wind carries inherent risk and can have serious consequences.
Falls into water	Similar	Activities in locations where falls into water are likely are similar.
Diving	Similar	Similar activities and frequencies.
Manual material handling	Similar	Similar needs for upgrades or maintenance requiring manual handling of equipment and materials.
Long-term physical wear and tear	Similar	Relatively little climbing is required for offshore oil and gas workers, but shifts and work schedule may be longer.
Mechanical hazards (e.g., pinch points)	Similar	Both installations require work on machines that pose dangers to workers.
Slips and trips	Similar	Common hazards in all workplaces.
Exposure to heat and cold	Similar	Both wind and oil and gas facilities have limited climate-controlled spaces.
Falls from heights	Similar	More climbing and higher climbing is required for activities on wind turbines; however, a higher exposure rate for personnel on oil and gas platforms may exist.
Fire	Lower	Oil and gas facilities process flammable materials.
Explosion	Lower	Oil and gas facilities process flammable materials.
Crane lifts	Lower	Oil and gas facilities generally have permanent cranes that are used more frequently than those that may exist on wind turbines.

Table 2. Risk from Typical Hazards for an Offshore Wind Farm Worker Compared with Those for an Offshore Oil and Gas Worker

The Transportation Research Board, 'Workers Health and Safety on Offshore Wind Farms' (Special Report 310 2013) <http://www.nap.edu/catalog/18327/worker-health-and-safety-on-offshore-wind-farms-special-report-310> accessed 6 May 2022.

The Call for Regulatory Reconfiguration: The Safety Case Meta-regulatory Model

Safety Case: used in the offshore oil and gas industry under Offshore Installation Safety Case Regulations 2015 "a document which demonstrates adequacy of operators management system, for design and operation of the installation, proper identification of potential major hazards of the installation and prevention or mitigation measures."…...helps give stakeholders CONFIDENCE/ASSURANCE

- It includes Quantitative Risk Analysis (QRA), Formal Safety Assessments (FSA) and Safety Management systems amongst.
- Regulatory safeguards like, independent verification, auditing, `living document' and all under a permit system.

CONCLUSIONS

This research has critically evaluated not just the health and safety implication of offshore wind energy development but also how it compares with offshore oil and gas. Through a functional comparative analysis, it is revealed that except for the volatility of oil and gas, both offshore energy industries share remarkably similar health and safety risks. This proven analogous nature of the two industries justifies the assertion that the regulatory framework should equally be similar. While experience shows a reactive approach of law to the mitigation of safety risks, this research argues for a more proactive approach that will support the expected industry growth.

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New Shoreham, United States
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