

**BESPOKE RESEARCH AND  
CONSULTANCY FROM**



## **HSE Science & Research Centre**

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**Bespoke research and consultancy** - using our scientific expertise and regulatory insight to address health and safety risks

## Preventing incidents, protecting people



# **Access to HSE's unique resources**



**An ability to  
understand & solve  
complex issues**

# Health

We can help you to:

- rethink your current health management
- address the real risks in the right way
- procure smarter and protect your workers

A photograph of Professor David Fishwick, a man with glasses wearing a light blue button-down shirt, holding a small black device in his right hand. He is standing in front of a large, glowing, 3D medical scan of a human torso, showing internal structures like the lungs and spine. The image is partially obscured by a large white triangle on the left side of the slide.

**Professor  
David Fishwick –  
Chief Medical Adviser**

# Human Factors

We can help you to:

- improve performance by enhancing business leadership, culture and procedures
- reduce human error to prevent catastrophic failure
- achieve excellence in organisational learning



# HSE and the Wind Industry

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BWEA, which could be used as a tool for companies making planning proposals. HSE's Utilities section is also involved in a range of issues including safe access to turbines, public safety concerns, supply chain issues and skills and labour issues (non-UK nationals working for foreign manufacturers or supplier companies at wind farms; potential language, different standards issues) and other offshore specific concerns.

## Recommendations

Given the large expansion planned in wind turbine construction it can be expected that the potential for accidents will increase and that some of these will involve workers and the public.

- HSE needs to consider the resource implications of inspecting and regulating for this large increase.
- HSE to consider whether to put more resource into looking at the small/micro end of wind generation (within its responsibilities), which is increasing in the UK. An accident in this sector could have reputational damage on the whole wind sector.
- HSE to work with other agencies, countries and wind turbine suppliers on the safe design and integrity of wind turbines.
- HSE to consider producing guidance on wind energy and making it available on the HSE website.

Sam Bradbrook, Futures Team, January 2009



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**3-part Seminar Series**

# Health and Safety in the Offshore Wind Industry Lessons from the UK



## Health and Safety in the Offshore Wind Industry: Lessons from the UK

Thursday, April 29, 2021 - 10:00am

With some of the largest offshore wind farms in the world now being planned in the US, the US community will benefit from the UK's 25 years of experience in this area. There is an opportunity to rethink the US approach to health and safety in this sector, and examples of both successes and challenges in the UK will be helpful to shaping the future of the US offshore wind industry. Join Tufts Institute of the Environment for the first part of a virtual 3-part seminar series hosted in partnership by Tufts University, the University of Strathclyde, and the UK's Health and Safety Executive. [Learn more.](#)

# Offshore Wind

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- As of today, 162 offshore wind farms are up and running around the world.
- The UK remains the world's biggest offshore wind market with 10.4GW of total installed capacity, with Germany only narrowly retaining its second place with a total of 7.7 GW of operational capacity.
- China, in third place, is rapidly catching up with 7.1 GW of installed offshore wind power of which 2062MW was added in 2020, said the WFO report.
- Almost 10GW of offshore wind capacity is under construction worldwide, with China and the UK leading in terms of capacity.
- In China a total capacity of 4372MW is under construction, followed by the UK with a total capacity of 3705MW under construction.
- The UK's construction pipeline includes several of the world's largest offshore wind farms, such as Moray East (950MW) and 1.4GW Hornsea 2, the report highlighted.

# Health and Safety Research in Offshore Renewables Workshop

Virtual, 11 May 2021 at 2:00pm - 5:00pm



## Registration for this workshop has now closed

Health and Safety Executive (HSE) and Supergen Offshore Renewable Energy (ORE) Hub  
workshop

## Health and Safety Research in Offshore Renewables Workshop

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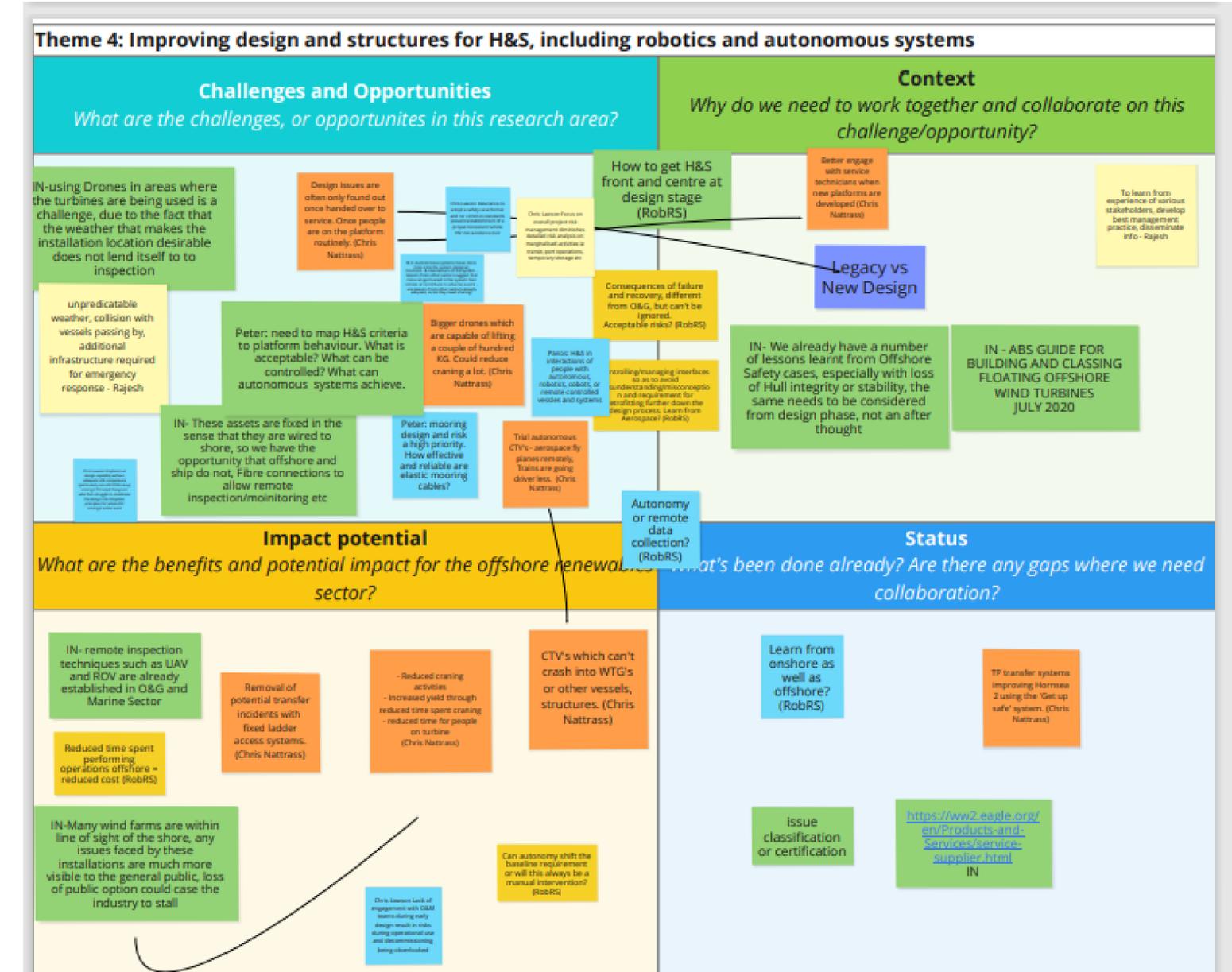
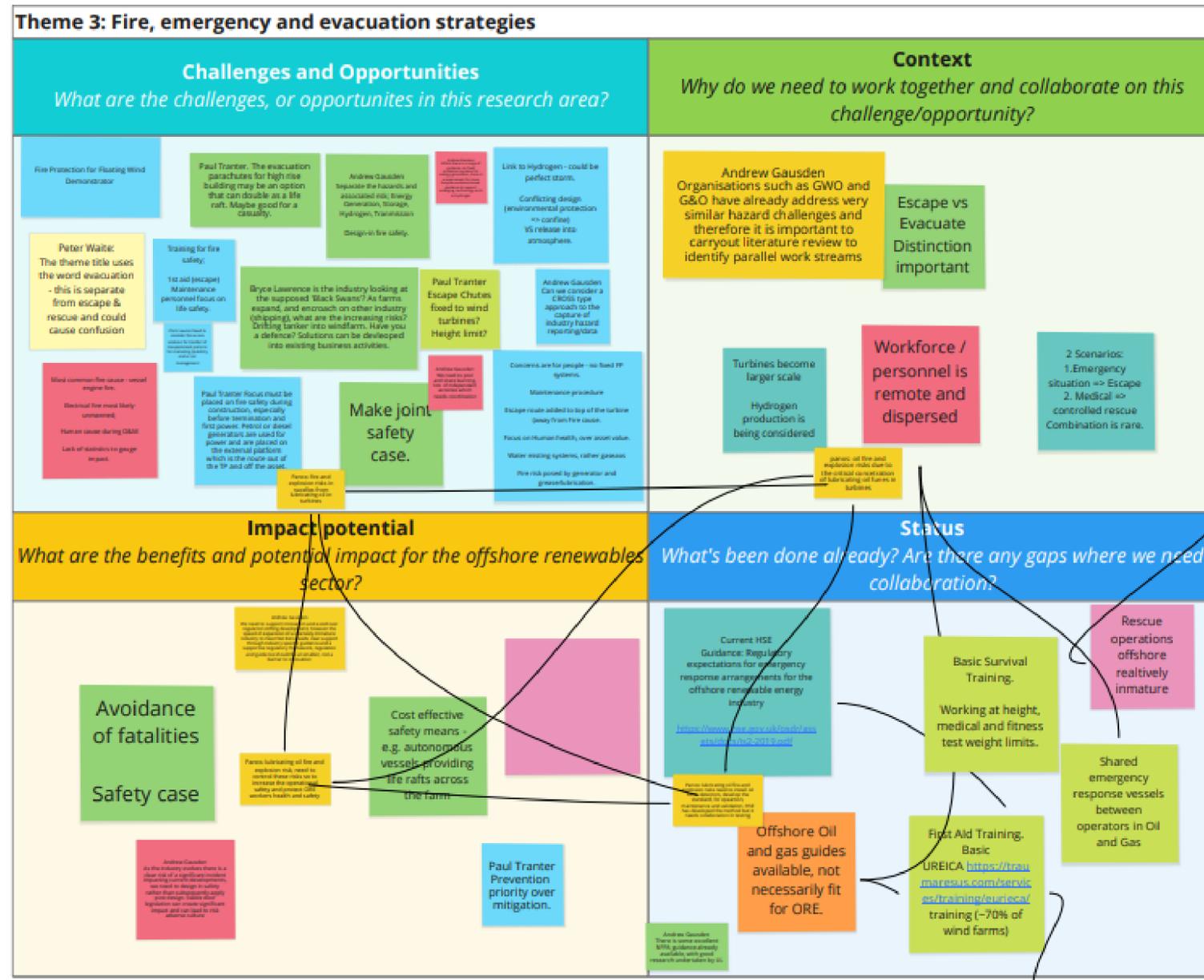
- Cross sector learning - knowledge transfer from Oil and Gas
- Human Factors
- Fire, emergency and evacuation strategies
- Improving design and structures for H&S, including robotics and autonomous systems
- Personnel safety and O&M strategies/technology
- H&S standards and regulatory culture/environment (Groups A & B)

# Health and Safety Research in Offshore Renewables Workshop





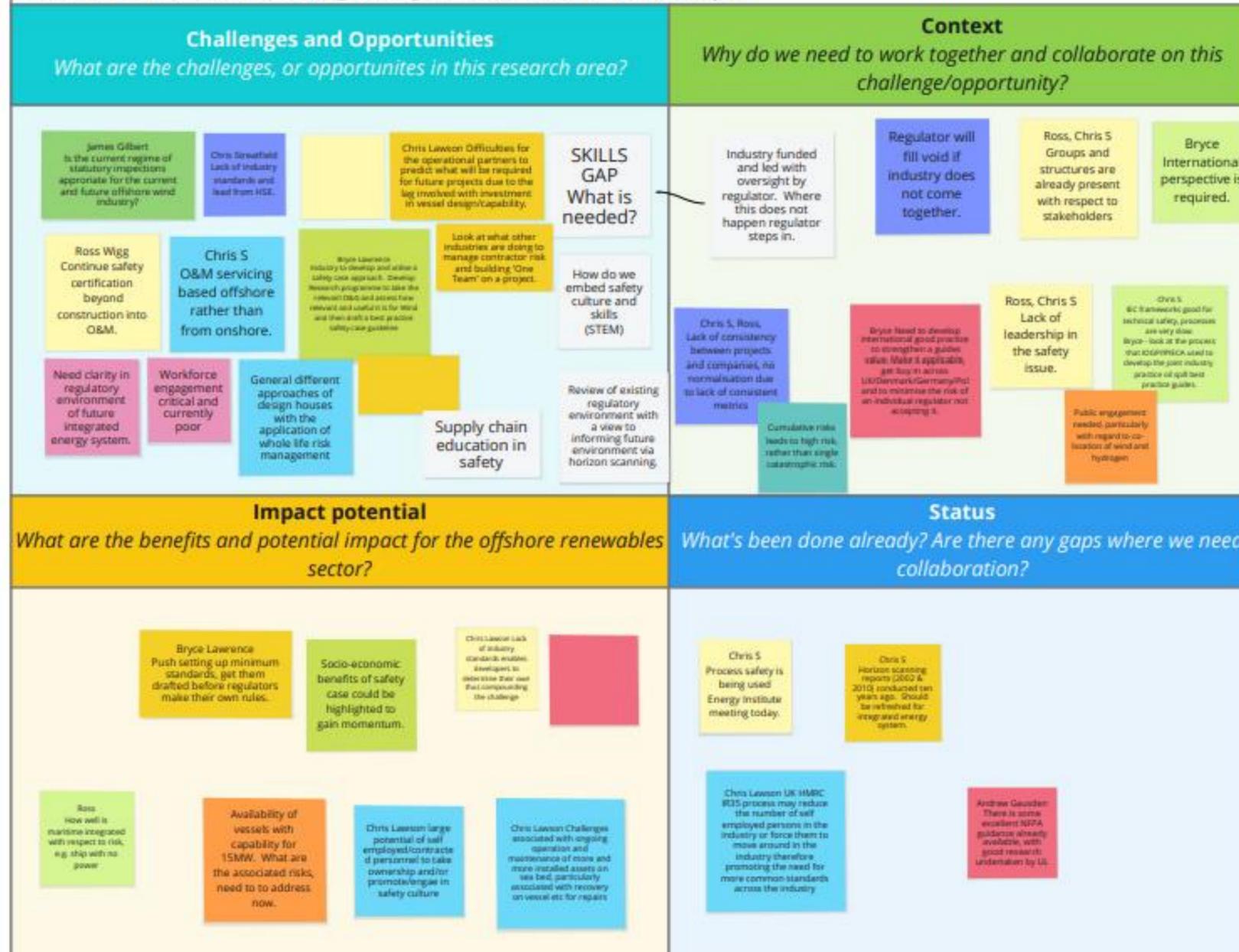
# Health and Safety Research in Offshore Renewables Workshop



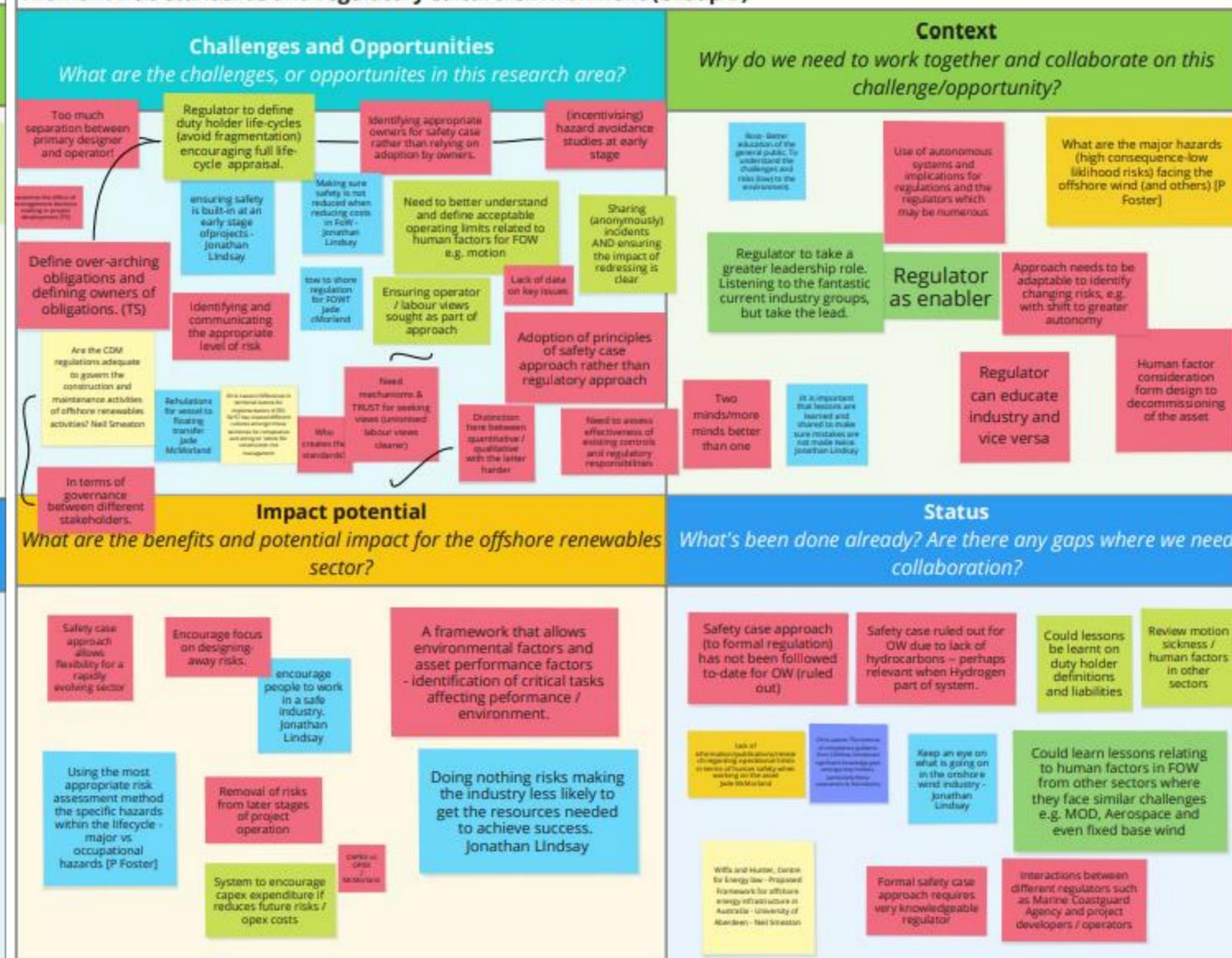


# Health and Safety Research in Offshore Renewables Workshop

**Theme 6: H&S standards and regulatory culture/environment (Group A)**



**Theme 7: H&S standards and regulatory culture/environment (Group B)**



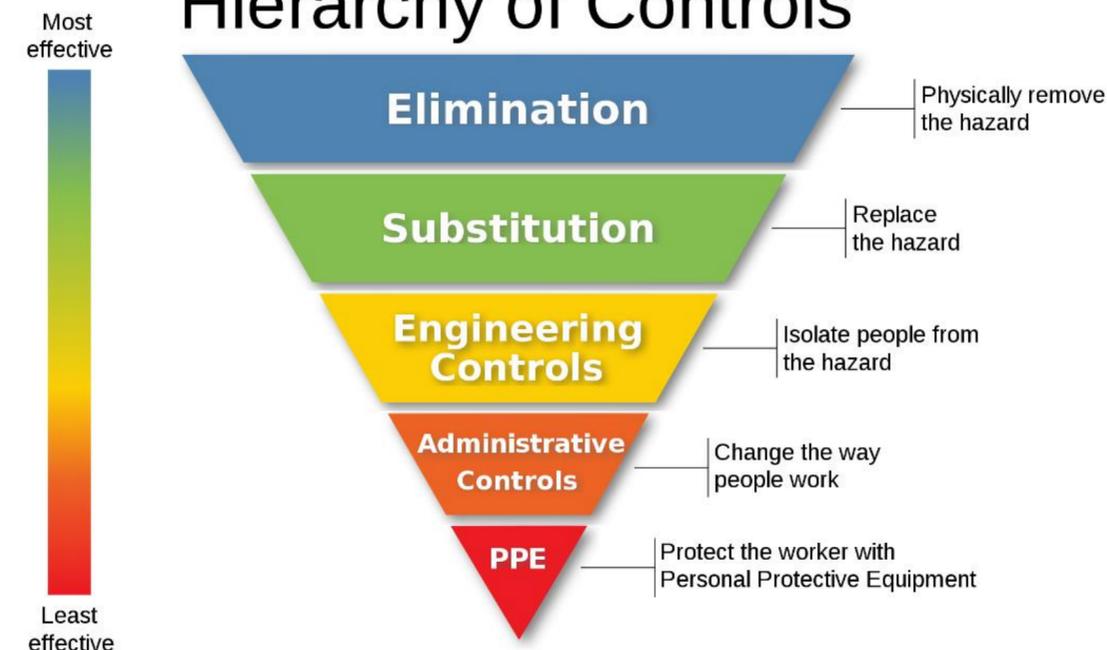
## **Floating Offshore Wind Health, Safety and Wellbeing Hub**

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- **A challenging environment for the worker – extreme, distant, dynamic, complex**
- **New construction, operation and decommissioning challenges**
- **Industry is developing the technology, demonstrators and the business case for FOW**
- **Early stage projects are economically and engineering-led but HS&W is integral and critical to satisfying regulations, and to good business**
- **Improving HS&W can also improve operational efficiency**
- **G+ stakeholders identified HS&W topic areas for FOW**
- **Industry can address some topics with existing knowledge and capabilities**
- **Proposing a multi-disciplinary partnership between industry, academia and the Regulator to consider lower TRL research activities around health, safety and wellbeing**

- To focus on Health, Safety & Wellbeing for Floating Offshore Wind workers
- Identify questions, build networks and propose research to answer questions using the best knowledge and capabilities of industry, academia and HSE
- Multi-disciplinary – Bring the science and engineering together with human factors and health knowledge
- Working in partnership with the Regulator through Thomas Ashton Institute
- Focus on the longer term, lower TRL activities where academia is best suited
- Aim to develop interdisciplinary research communities, topics, and interactions leading to funded research.

## Hierarchy of Controls



### Hub Discussion Topics

Gathering evidence on the H,S & W impacts of technology

Developing new technologies to eliminate, substitute or control exposure to hazards

Improved reliability – to remove the need for intervention

Safer by design – designing for technology to reduce risks

Data analytics – leading indicators, optimisation, health and wellbeing monitoring

Guidance, tools and knowledge sharing

# Occupational Health of Offshore & Onshore Wind Workers

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- The principal goal of the proposed project is to explore the root causes influencing Occupational Stress and subsequent impacts on mental wellbeing, amongst Offshore Wind Technicians. The project aims to:
  - a) examine the range of local stress factors currently influencing work-induced strain, both positively and negatively,
  - b) measure the level of strain within the selected teams
  - c) examine a number of potential health and safety consequences due to Covid-19 control:
    - • Increased fatigue caused by additional demands resulting in an increased accident rate;
    - • Wellbeing due to working at home, feeling of isolation; etc.
  - d) propose an action plan outlining potential control mechanisms.
- This work will support the Offshore Wind Industry in adhering to the requirements of the Health and Safety at Work Act (Management of Health and Safety at Work Regulations, 1999).

... we believe everyone has the right  
**to go home healthy**

# Over to you...

## Time for your questions...



**Get in touch:** [panagiotis.stavrakakis@hse.gov.uk](mailto:panagiotis.stavrakakis@hse.gov.uk)