

OPIN Webinar: Operations and Maintenance 101

7th of July 2021



Welcome

- Attendees' microphones will be muted during the event.
- After the presentation there will be time for a Q&A Session.
- Questions can be formulated in the chat at any time, and they will be addressed during the Q&A session.
- The event will be recorded, and the slides will be shared on the OPIN website.



Agenda

- **11:00 11:10 OPIN Introduction** *Magnus Willett Offshore Renewable Energy Catapult*
- **11:10 12:00 Operations and Maintenance 101 –** *Katharine York Offshore Renewable Energy Catapult*
- **12:00 12:15 Industry Experience –** *Shaun Lyons HFR Solutions*
- **12:15 12:30 Industry Experience –** *Glenn Thow LCS Group*
- 12:30 12:45 Q&A Session





OPIN IntroductionMagnus Willett – ORE Catapult



What is OPIN?

Ocean Power Innovation Network (OPIN) is a **European collaborative network**

OPIN Aim:

 Develop both cross-regional and cross-sectoral collaboration

OPIN Targets:

- Support over 100 companies
- Develop a self-sustaining network (>200 members)



4 years from 2019 to 2022



2.6M€ total project budget1.5M€ in financial supportfrom Interreg North West Europe



Join the network (free)



Who are OPIN?

7 partners from Ireland, UK, Belgium, France, the Netherlands and Germany













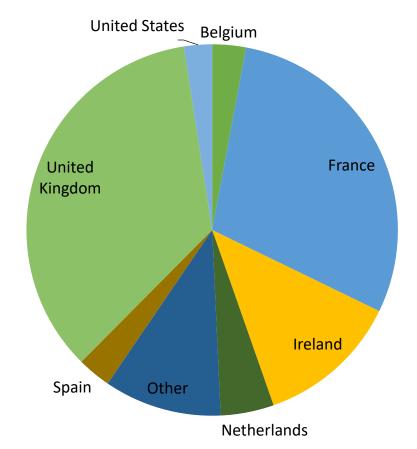


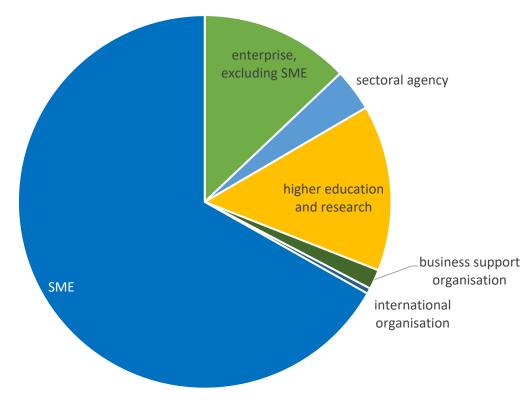
Project Partners	Countries/Regions
Sustainable Energy Authority of Ireland (SEAI)	Ireland
Scottish Enterprise (SE)	Scotland
Offshore Renewable Energy Catapult (OREC)	United Kingdom
Sirris, het collectief centrum van de technologische industrie (SIRRIS)	Belgium
West Atlantic Marine Energy Community, École Centrale de Nantes (WEAMEC)	France Pays de la Loire
Dutch Marine Energy Centre (DMEC)	Netherlands
Fraunhofer-Gesellschaft zur Förderung der angewandten Forschung e.V. (Fraunhofer IEE)	Germany



OPIN Members







Other countres (2 members or less): Australia, Canada, Denmark, Finland, Germany, Hong Kong, India, Indonesia, Italy, Malaysia, Monaco, Norway, Russia, Sweden, Switzerland, Vietnam



What can OPIN do for you (1/2)

Access free events: learning and networking opportunities

- OPIN Annual Symposium 2021: 23rd of September 2021 @ 13:15 CEST
- **O&M** in Emerging Ocean Energy Technologies September tbc
- Financial Modelling for O&M in the Marine Energy Sector September tbc

Have a look at our **Events page** and register today!



What can OPIN do for you (2/2)

Receive travel support

✓ Enabling Irish and Scottish Enterprise SMEs to travel abroad for OPIN events



Access expert advice on your technology (TAPs)

- ✓ Independent expert opinion e.g. on the route to market, on reducing development risks and costs, etc.
- ✓ Advice on next steps, funding and collaboration opportunities



Support collaborative projects (CIGs)

- ✓ Preparatory step to National and EU research calls
- ✓ Find ways to solve technical or financial problems you are facing interreg
- ✓ Expand your network nationally and internationally
- ✓ Benefit from the experience of those in other industries



OPIN Resources



OPIN Members list



OPIN Library:

- Workshops/masterclasses presentations
- Value chain study summary report
- Ocean energy challenges and recommendations: Desktop analysis of studies and reports



OPIN Twitter and Linkedin groups. Join us for the latest updates!



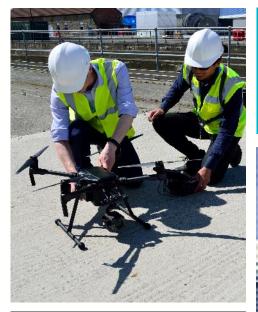
Email us at: OPIN@seai.ie



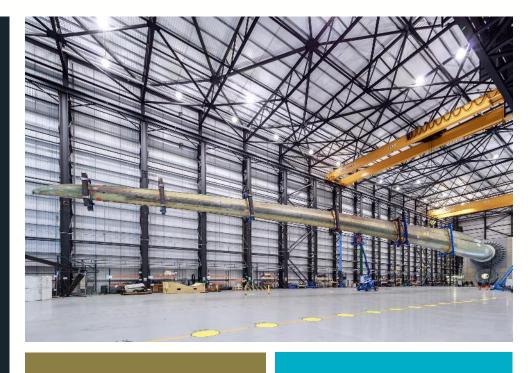


Operations and Maintenance 101 Katharine York – ORE Catapult











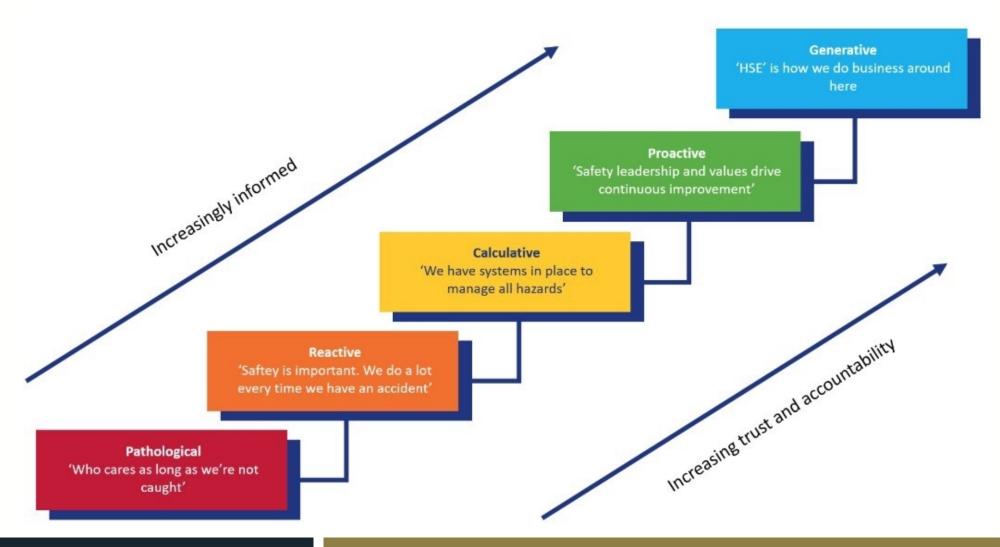




Safety







https://heartsandminds.energyinst.org/



lightning

homesafe Wave

zeroharm behaviouralsafety

ergonomics welfare

space tofs weather take5

fatigue first aid injury

safety standdown evacuation

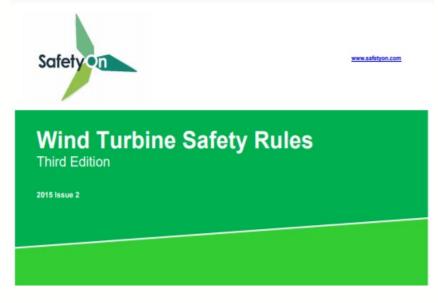
remote height seasickness wind

droppedobjects



- Training
- Personnel tracking
- Release of plant
- Authorisation levels



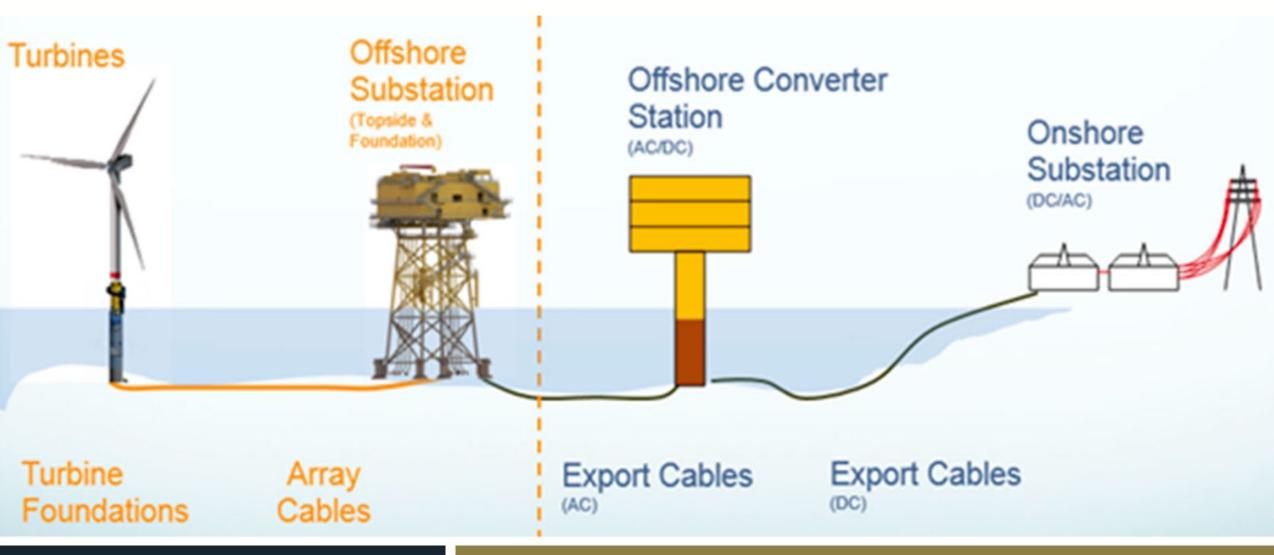


Who's who



Typical layout

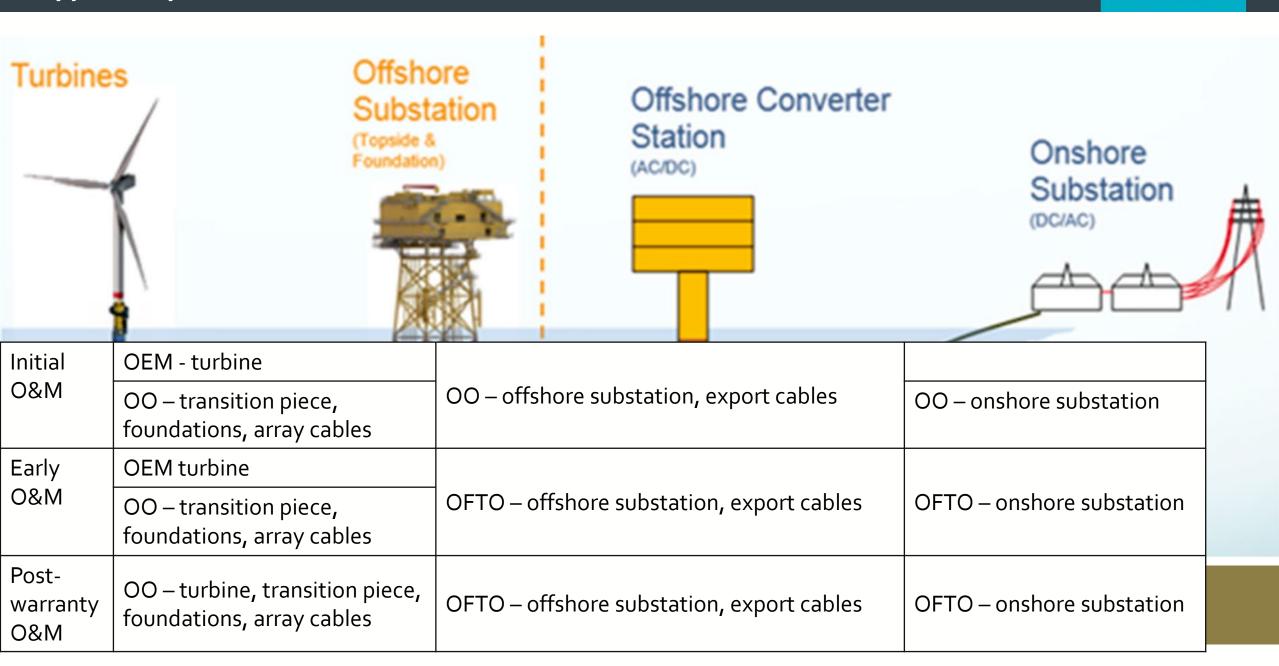




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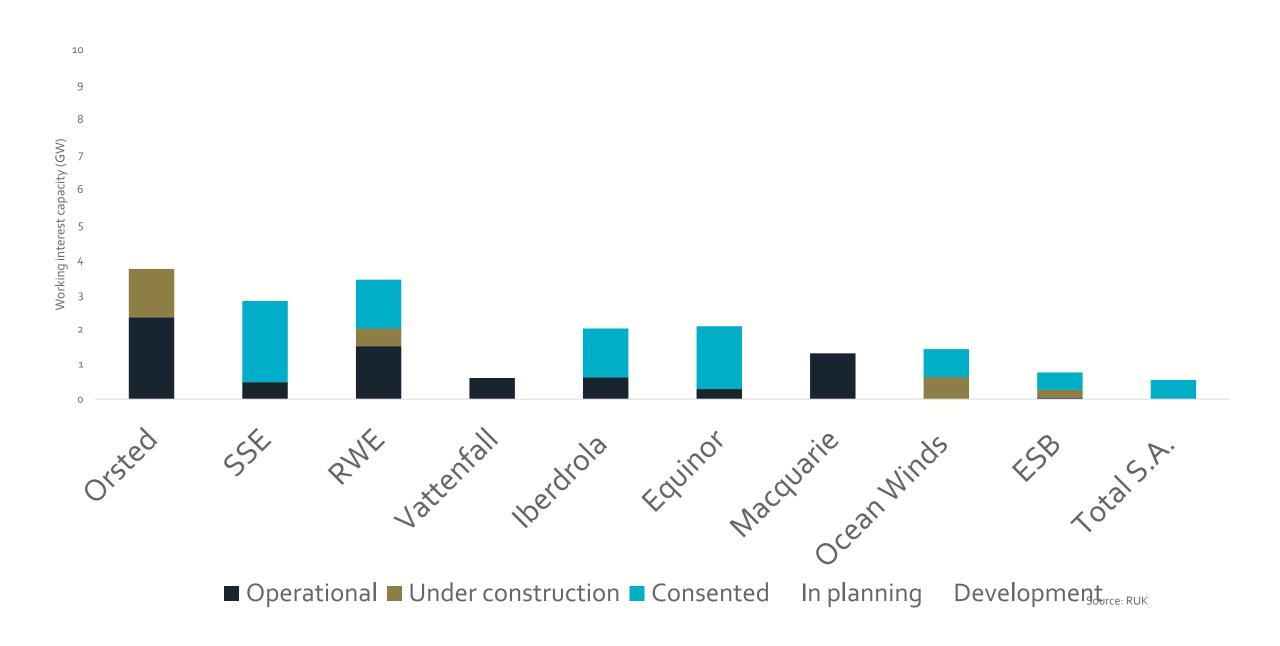
Typical layout





Top 10 UK offshore wind asset owners by capacity — late 2020





O&M activities





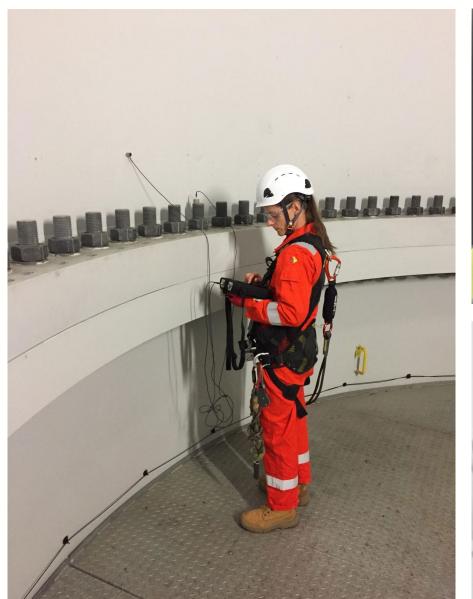


Routine WTG maintenance

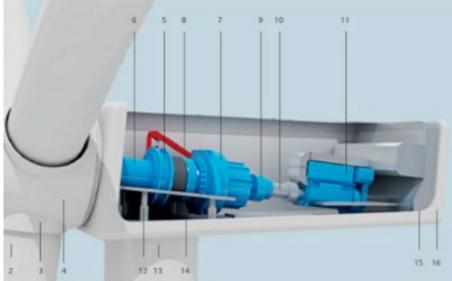


Servicing & troubleshooting

Mechanical, electrical, hydraulic







Statutory inspections & Civil Balance of Plant



Turbine-mounted safety equipment:

- Anchor points
- Fall arrest systems

Pressure systems

Lifting systems

Transition piece and foundations





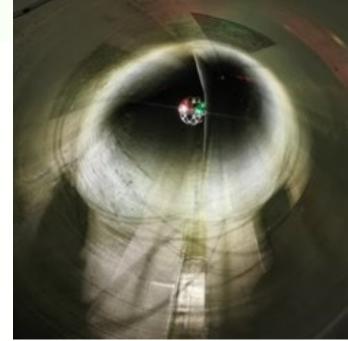
http://www.skyformwind.co.uk/services/

Blade maintenance



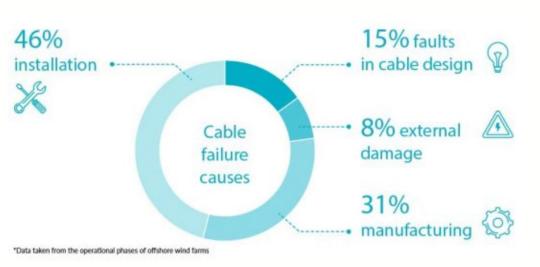


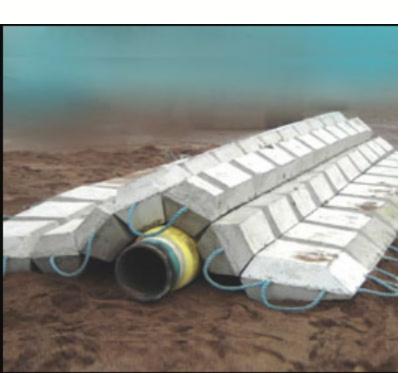




Subsea









THE HUMBER OFFSHORE WIND CLUSTER

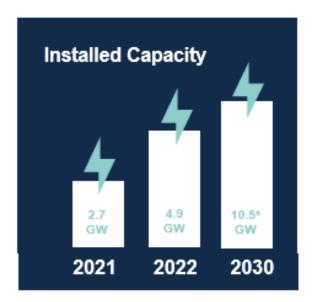


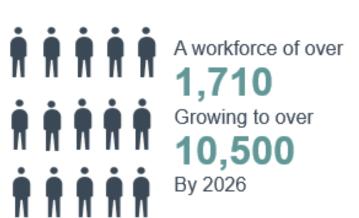
THE HUMBER OFFSHORE WIND CLUSTER The Humber, home to the UK's most established offshore wind

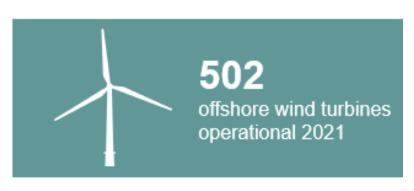
cluster





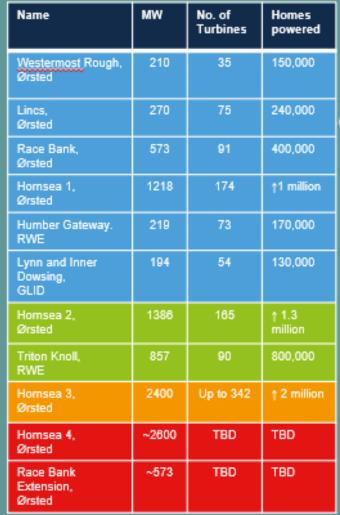






WIND CLUSTER

Humber offshore wind farms







Hornsea

(2.400MW)

Project Three

Suppliers to the offshore wind O&M sector



Shaun Lyons





Glenn Thow







Industry ExperienceShaun Lyons - HFR Solutions

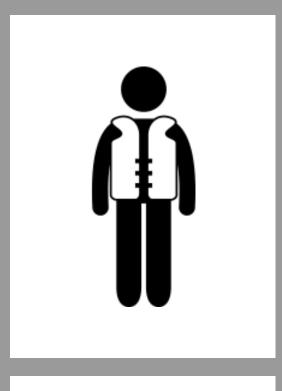




Shaun Lyons | Operations Director

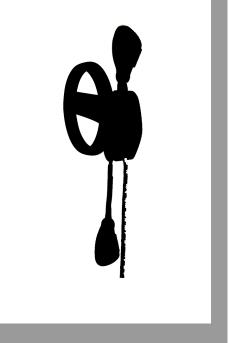


Planning to operate in the Offshore Renewable sector?







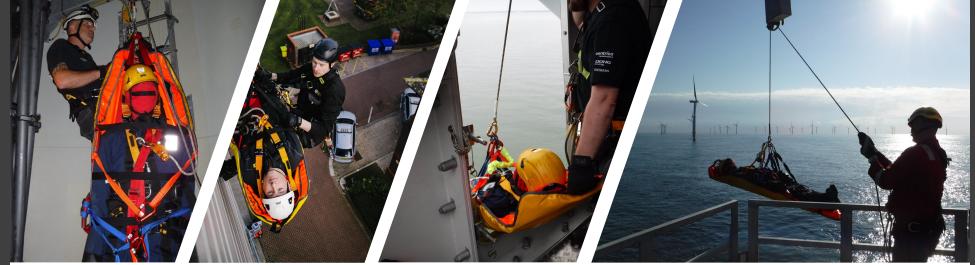


GWO Requirements

- Work at Heights & Manual Handling
- Fire Awareness
- First Aid
- Sea Survival

Site Requirements

- Specific Site Inductions
- Offshore Medical



Offshore Safety & Emergency Preparedness

- Planning & Preparedness
- First Aid & Rescue Training
- Enhanced Equipment
- Emergency Procedures
- Rescue Exercises





Case Study - the facts



Generationsafe



2020 highlights

2020 Key facts and figures

Offshore Statistics



Top three work process

incidents during lifting operations³
 incidents during manual handling
 incidents during access/egress

Incident areas

Incidents occurred in a turbine⁶
 Incidents occurred on vessels⁸
 Incidents occurred onshore⁹

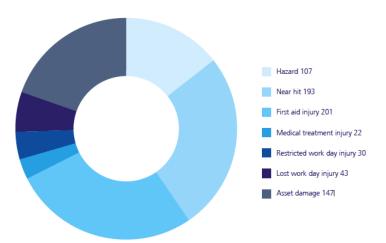
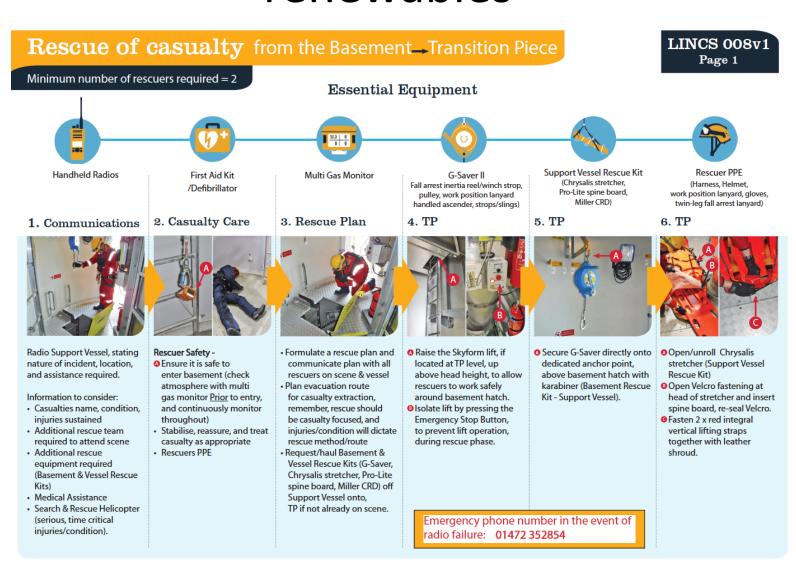


Figure 2: 2020 incident consequence summary.

² Throughout this report, injuries will denote the number of injured people and incidents will denote the number of occurrences that led to or potentially led to an injury. Injuries are defined as a person requiring first aid, medical treatment, restricted work day, or lost work day.

3.4.5.6.7.8.9 See Annex A for the definitions of these terms

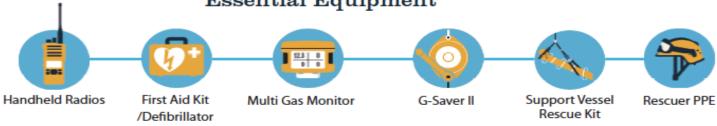
HFR Solutions working in partnership with offshore renewables

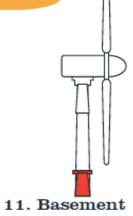


Rescue of casualty from the Basement—Transition Piece

Minimum number of rescuers required = 3

Essential Equipment





LINCS 008v1 Page 2

12. TP



- Rescuer to attach to anchor point in 'work restraint'
- Lower Chrysalis Rescue Stretcher vertically (with Spine Board inserted) on G-Saver (use in fall arrest mode/winch disengaged for speed)

Note

7. TP

- Ensure both <u>red</u> load bearing, integrated straps, on Chrysalis stretcher are attached to G-saver karabiner
- Assemble additional rescuers at TP entrance (if available), to assist with rescue operations.



8. Basement

- Keep G-Saver karabiner attached to Chrysalis stretcher (if practicable)
- Keep casualty calm, maintain good communication with rescue team at TP level and inform vessel of any changes in casualties condition
- Load incapacitated casualty into stretcher, secure internal harness, and outer straps.



9. Basement

Secure G-Saver karabiner to Chrysalis stretcher (make sure both red vertical lifting straps are secured in karabiner)



Rescuer/s to secure to anchor point in 'work restraint'

10. TP

Rescuer/s to haul casualty with G-Saver in 'Rescue Winch Mode'.



- Rescuer located in basement. to guide casualty up through mid-level (use twin leg fall arrest lanyard)
- Rescuer operating G-Saver winch to maintain visual contact with casualty, to ensure snagging issues can be identified immediately



 Rescuers (min 2), attached to anchor point in 'work restraint', to manually move casualty/ stretcher towards TP entrance

Note

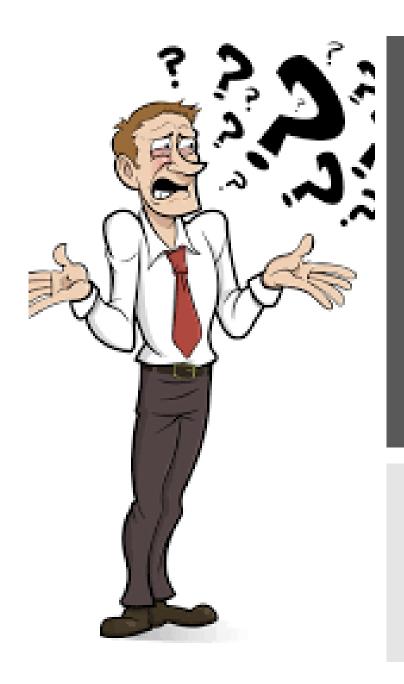
G-Saver to remain attached to Chrysalis stretcher, until basement hatch is fully closed.

- Rescuer to close basement hatch, once casualty is clear, and disconnect G-Saver from Chrysalis stretcher
- Rescuer/s to prepare casualty for vessel transfer (refer to TP-Vessel Rescue Plan).



The challenges for SME's working offshore

- Procurement Process
- Finance
- Compliance
- Training
- Planning



Any Questions?



Industry ExperienceGlenn Thow - LCS Group



Operations & Maintenance 101 Ocean Power Innovation Network

The LCS Story

Glenn Thow CEO

LCS Group Ltd

Thursday 7th July 2021



Our Concerns

- Company Size
- Turnover
- People
- Credibility
- Capability





- Qualification Worries
- 9001 Quality Management
- 27001 IT Management
- 14001 Environmental
- Sector Specific Accreditations Count
- Demonstrate Experience & Capability



CERTIFICATE OF ASSURANCE

LCS Group Ltd

1 Alexandra Road, Grimsby, North East Lincolnshire, DN31 1RD

COMPLIES WITH THE REQUIREMENTS OF THE CYBER ESSENTIALS PLUS SCHEME

NAME OF ASSESSOR: Ryan Bradbury

CERTIFICATE NUMBER: IASME-CEP-003712

THE RESIDENCE OF THE PROPERTY OF THE PROPERTY

PROFILE VERSION: April 2020

RECERTIFICATION DUE: 2022-5-10

DATE OF CERTIFICATION: 2021-05-10

SCOPE: Whole organisation

CERTIFICATION MARK



CERTIFICATION BODY



CYBER ESSENTIALS PARTNER



The Certificate certifies that the organisation was assessed as meeting the Cyber Essentials Plus implementation profile and thus that, at the time of testing, the organisation's ICT defences were assessed as satisfactory against commodity based cyber attack. However, this Certificate does not in any way guarantee that the organisation's defences will remain satisfactory against a cyber attack.





Track Record Counts

- 15 Years in Gas Generation
- Supporting 6 Stations Across The UK
- Multiple Successful Innovation Projects
- Trusted At Highest Levels





- Get Out There
- Use Support Groups
- Attend Events
- Ask What People Want
- Build Connections
- Ask For Introductions











Be Prepared







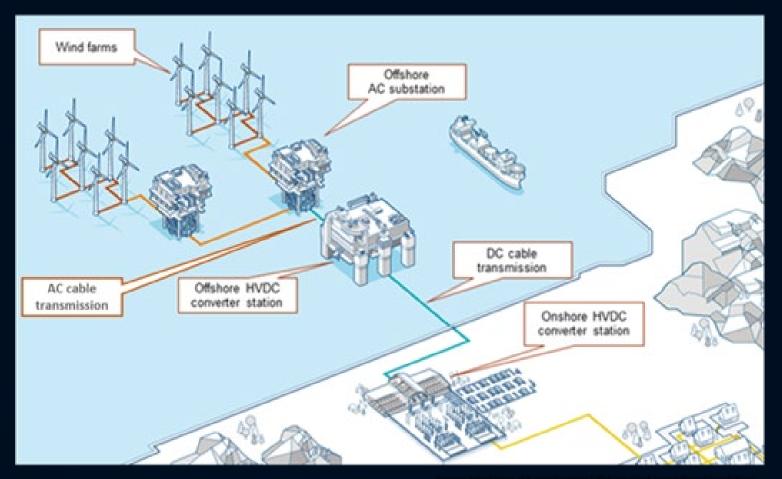








- Project 1 Data Segregation
- Centrica Sale Catalyst
- Multiple Big Players Daunting
- Practical Experience Counts
- Small Team Agility
- Coordination Skills Vital
- Don't Be Customer Led







- Project 2 Telemetry
- Siemens Interface WP/SCADA
- Sea Sub Station to Land
- Data Transmission Xceco
- SQL & Power BI
- Failover Redundancy
- Security
- National Grid Project













national**grid**











- Success Breeds Growth
- IT Outsourcing Contract
- Range Supplementary Services
- Continued Innovation
- Mutual Success Builds Strong Relationships







Ingredients For Success

- Get Out There & Build Contacts
- Demonstrate Skills & Track Record
- Strong Teamwork
- Agility
- Tenacity & Coordination
- Self Belief









Q&A Session

