Global workshop:

Safer decommissioning of offshore structures and ships

Workshop report

Summary of an event held on 8 and 9 July 2019, London

Safer End of Engineered Life Mission

September 2019

Contents

1 Foreword 5
2 Mission and objectives 7
3 Participants 8
4 Workshop schedule 13
5 Summary of Workshop Activities 15
Welcome by Convenor and Chair 15
Participant introductions 16
Live polling 19
Invited presentations 23
Identification of stakeholders 29
Aspirations for state-of-practice in 5, 10 and 25 years and levers for change 31
Planning for day two 33
Networking social event 34
Development and presentation of outline proposals 36
Workshop wrap-up 43
6 Post-workshop activities 44
Survey results 44
Expressions of interest for funding call 45
7 Concluding remarks 46

Participants of the Safer Decommissioning of Offshore Structures and Ships workshop, London, 8 to 9 July 2019

1 Foreword

On 8 and 9 July, the Royal Academy of Engineering in partnership with the Lloyd's Register Foundation hosted a global workshop in London to address Safer Decommissioning of Offshore Structures and Ships[1], as part of the wider Safer End of Engineered Life Mission[2].

The workshop was designed to convene stakeholders from a broad range of disciplines and sectors to work together to identify fundamental safety challenges in the area and impactful ways to address them. An emphasis was placed on shaping new collaborations leading to projects that create impact in this area where it is most needed.

The workshop attracted a large number of applications from individuals and organisations from across the globe. Invitations were extended to 62 individuals, and 58 made it to the event. Unfortunately, visa issues prevented some invited participants attending the workshop in person, but those individuals were included in the post-workshop opportunities. Participants were selected to ensure broad geographical representation (21 countries) and representation from industry (18), government (5), NGOs (10) and academia (25) with principal interests in decommissioning offshore structures and/or ships.

The workshop was followed by a call for proposals for funding available to workshop participants and their wider networks[3]. By the closing date (31 August 2019), 16 expressions of interest were submitted for consideration for funding through the scheme. At the time of issuing the report, the expressions of interest for proposal submissions were under review by the Programme Board.

[1] www.raeng.org.uk/grants-and-prizes/grants/international-research-and-collaborations/safer-end-engineered-life/safer-decommissioning-offshore-structures-ships

[2] www.raeng.org.uk/grants-and-prizes/grants/international-research-and-collaborations/safer-end-engineered-life

[3] URL for EOI for proposals https://grants.raeng.org.uk/ - Safer End of Engineered Life – Offshore & Ships EOI

Postcards with the mission and objectives of the programme were displayed around the workshop venue as a reminder of the focus of the workshop.

2 Mission and objectives

The objectives of the workshop reflected the mission and objectives of the Safer Decommissioning of Offshore Structures and Ships Programme.

Mission

To achieve safety though raising standards, improving consistency and spreading the implementation of best practices in the global handling of the decommissioning of offshore systems and ships.

Objectives

- Map out the critical safety issues and stakeholders in decommissioning of offshore structures and ships.
- Identify ways to address the critical safety issues where they are most prevalent and/or present the biggest threat to safety of life, property and environment.
- Facilitate new international, interdisciplinary and inter-sector collaborations that address these safety challenges through transfer, adaptation and generation of knowledge and contextually appropriate best practices.
- Build an active global community of leaders and stakeholders who have lasting and impactful collaborations that are cross-disciplinary and driven to solve challenges and improve safety in the decommissioning of offshore structures and ships.

3 Participants

Participants were drawn from across the globe and represented cross-sector interests in decommissioning offshore infrastructure and ship recycling. Figure 1 shows a breakdown of participants by country and sector. A full list of participants is given in Table 1.

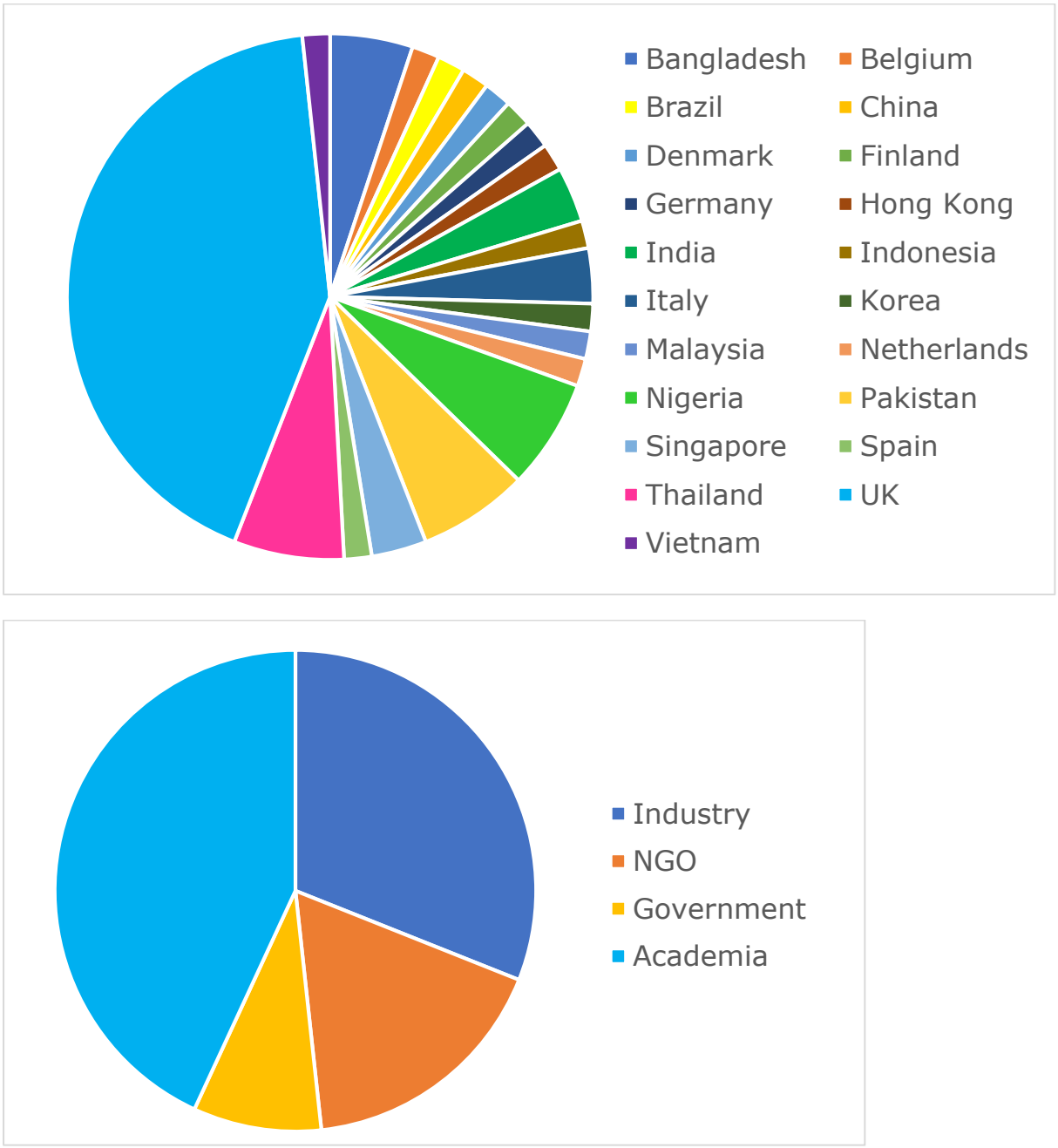


Figure 1. Breakdown of participants by country and sector

Table 1. List of workshop participants

Name	**Organisation**	**Country**
Alan Stokes	Advisian	UK
Andrew Stephens	Sustainable Shipping Initiative	UK
Antonio Barredo	DVessels XXI	Spain
Arun Dev	Newcastle University in Singapore	Singapore
Asif Ali Khan	Pakistan Ship Breakers' Association	Pakistan
Athanasios Kolios	University of Strathclyde	UK
Chengi Kuo	University of Strathclyde	UK
Christiana Ovie Akpoduado	Nigeria Maritime University	Nigeria
Coco Burch	Royal Academy of Engineering	UK
Colin Boxall	Lancaster University	UK
David Garcia	The University of Edinburgh	UK
David Vega-Maza	University of Aberdeen	UK
Emily Reid	Southampton Law School	UK
Farrukh Punjwani	Prime Ship Breakers	Pakistan
Fraser Sturt	University of Southampton	UK
Garry Stevenson	BP	UK
Gianluca Sardi	University of Teramo	Italy
Giuseppina Rosato	University of Teramo	Italy
Harry Coules	University of Bristol	UK
Hazel Ingham	Royal Academy of Engineering	UK
Henning Gramann	GSR Services	Germany
Ingvild Jenssen	NGO Shipbreaking Platform	Belgium

Jahir Rizvi	University of Plymouth	UK
Jan Przydatek	Lloyd's Register Foundation	UK
Jeom Kee Paik	Pusan National University	Korea
Jin Wang	Liverpool John Moores University	UK
Jinsong Zhao	Shanghai Jiao Tong University Shenzhen Research Institute	China
John Munnings-Tomes	Navigators	UK
Jullapong Thaveesri	Ministry of Industry	Thailand
Kabari Sam	Centre for Environment, Human Rights and Development	Nigeria
Katharine Palmer	Lloyd's Register	UK
Lee Allford	Energy Institute	UK
Luis Carlos Rosa	SEIP 7	Brazil
Maria Kouboura	The Institute of Marine Engineering, Science and Technology (IMarEST)	UK
Mark Van Latum	Shell	Netherlands
Martin Maseo	Energy Institute	UK
Md Golam Sarwar	Prantik Group	Bangladesh
Michael Fitzpatrick	Coventry University	UK
Michael Tsimplis	Hong Kong City University	Hong Kong
Mohammed Zahirul Islam	PHP Ship Breaking and Recycling Industries Limited	Bangladesh
Muhammad Agus Kariem	Institut Teknologi Bandung	Indonesia
Muhammad Khan	Environment Protection Agency, Government of Balochistan	Pakistan
Nikolaos Nikitas	School of Civil Engineering, University of Leeds	UK
Omar Bin Yaakob	Universiti Teknologi Malaysia	Malaysia
Per Winther Christensen	Danish Shipping	Denmark
Phan Anh Tuan	Hanoi University of Science and Technology	Vietnam

Rafet Emek Kurt	University of Strathclyde	UK
Rajesh Madusudanan	Lloyd's Register Asia	India
Rakesh Bhargava	Sea Sentinels	Singapore
Richard Neilson	National Decommissioning Centre (University of Aberdeen)	UK
Rizwana Hasan	Bangladesh Environmental Lawyers Association (BELA)	Bangladesh
Rukevwe Siakpere	Centre for Environment, Human Rights and Development	Nigeria
Ruth Boumphrey	Lloyd's Register Foundation	UK
Saleem Uz Zaman	Global Environmental Management Service (Pvt) Ltd	Pakistan
Saurabh Kumar Arya	Oil Industry Safety Directorate	India
Sebastian Scott	Royal Academy of Engineering	UK
Sefer Anil Gunbeyaz	University of Strathclyde	UK
Shaarad Sharma	Royal Academy of Engineering	UK
Shelley Stromdale	Royal Academy of Engineering	UK
Spyros Hirdaris	Aalto University	Finland
Steve Gilbert	Lloyd's Register	UK
Supat Napanoparatkaew	Department of Mineral Fuels, Ministry of Energy	Thailand
Susan Gourvenec	University of Southampton	UK
Sutha Khaodhiar	Chulalongkorn University	Thailand
Tim Slingsby	Lloyd's Register Foundation	UK
Ujjwal Bharadwaj	TWI Ltd	UK
Vicha Noinivorn	Unithai Shipyard and Engineering	Thailand
Wahid Azizi	Royal Academy of Engineering	UK
William Powrie	University of Southampton	UK

An international, transdisciplinary, cross-sector cohort of participants contributed to the workshop

Participants getting to know each other during the workshop

4 Workshop schedule

Day one of the workshop was designed to identify the key challenges, stakeholders and levers for change in safer decommissioning of offshore structures and ships. The activities enabled sharing of different perspectives and development of new relationships among the participants.

Day two of the workshop aimed to enable development of consortium proposals for initiatives and projects for the follow-on funding scheme. The Board and Academy staff provided facilitation to the participant working groups in the morning session. The afternoon was set aside for pitching proposals and getting feedback from the Board and other participants.

Day one objectives:

- Identify the key challenges and high-risk regions.
- Identify stakeholders.
- Get to know other participants, understand who is in the room and identify potential collaborations.
- Identify levers for change.

Day two objectives:

- Identify potential consortia for post-workshop activities.
- Draft outline proposals for funding.
- Present outline proposals and consortia to Academy/Lloyd's Register Foundation panel for review and feedback.

The detailed schedule for the two days of the workshop, followed by a summary of activities and outcomes of the activities, are set out below.

Monday 8 July	
9.00am	Welcome and introduction to programme.
9.15am	Introductions of all participants -one minute each accompanied by slide.
10.30am	Invited presentations for context setting.
11.00am	Break
11.30am	Identification of critical safety issues. Small group discussion activity.
12.15pm	Feedback to whole group on identified critical safety issues.
1.00pm	Lunch
2.00pm	Identification of stakeholders and reach of participant engagement with stakeholders. Small group discussion and mapping activity.
2.45pm	Identification of levers for change and where we want to be in 5 years, 10 years, 25 years. Small group discussion activity.
3.30pm	Break
4.00pm	Feedback to whole group on identified levers for change and ambitions for state of practice in near, medium and long-term.
4.45pm	Presentation on aspirations of the Safer Decommissioning of Offshore Structures and Ships Programme. Plan for Day two.
5.30pm	Close. Working and networking dinner at 7.00pm. Drinks from 6.30pm.

Tuesday 9 July	
9.00am	Recap plan for the day and boundary conditions for project proposals.
9.15am	Outline proposal and consortia idea development. Small group activity.
10.30am	Break
10.45am	Outline proposal and consortia idea development continued.
12.00pm	Lunch
1.00pm	Present outline proposal and consortia ideas (10 minutes/group) to participants and an Academy/Lloyds Register Foundation panel for open discussion and feedback.
2.30pm	Break
3.00pm	Continue with presentations.
4.45pm	Wrap up, dates and guidelines for next steps.
5.00pm	Close of formal part of the workshop.

Workshop schedule

5 Summary of Workshop Activities

Welcome by Convenor and Chair

Susan Gourvenec, Workshop Convenor, opened the workshop by welcoming the participants, setting out the ground rules for the workshop, an introducing the Royal Academy of Engineering staff.

William Powrie, Chair of the Safer End of Engineered Life Mission, then introduced the Royal Academy of Engineering and the Lloyd's Register Foundation, their partnership through the International Engineering Partnerships Hub, and the Safer End of Engineered Life Mission.

The slides accompanying the welcome were provided to the participants in the post-workshop email.

Workshop Convenor, Susan Gourvenec, opens workshop and takes a live poll of what participants hope to get from the workshop

Participant introductions

Each participant introduced themselves accompanied by a single slide that they had pre-prepared according to a template (Figure 2). The slides indicated both diversity and commonality of challenges and desires for the future. A summary of the key points is provided below. All the individual participant introduction slides were provided to the participants in the post-workshop email.

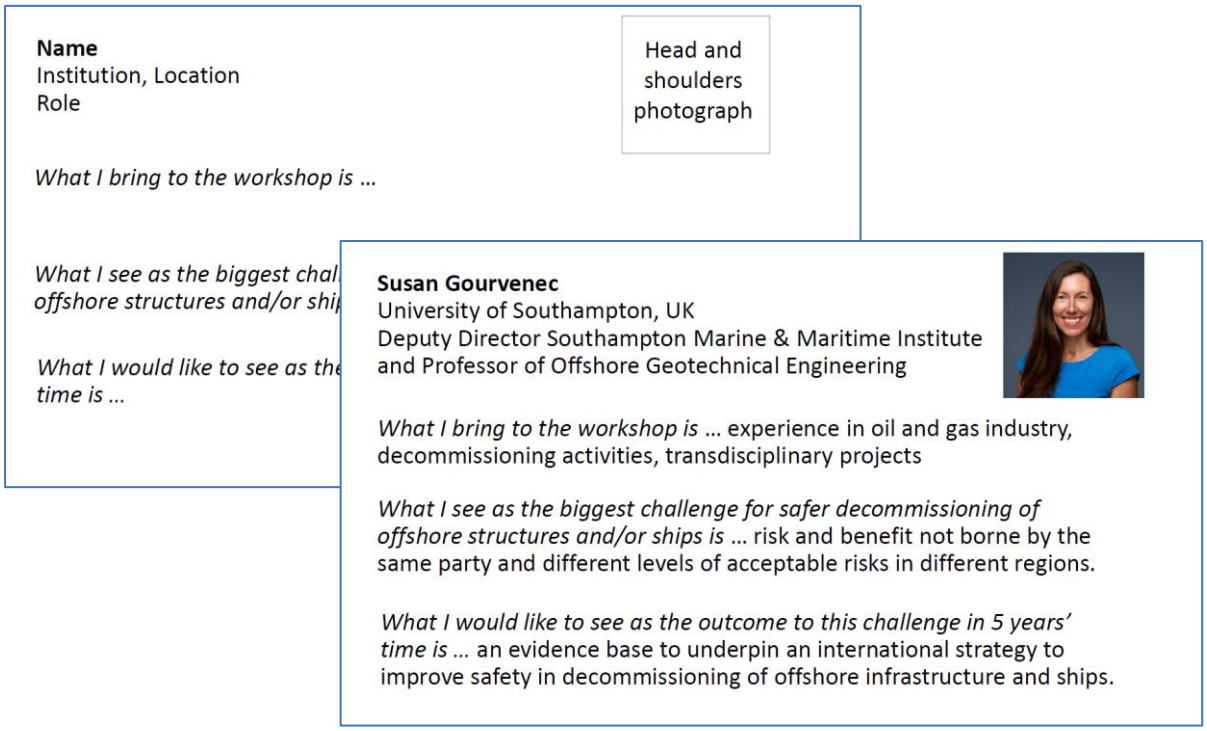


Figure 2. Participant introduction slide template and example

What I bring to the workshop is …

Regional and global experience in:

- offshore structures or shipping industries (including design, operation, management, decommissioning, recycling, decontamination, waste management, engineering, regulation, insurance, legal proceedings)
- practices, policymaking, standards, regulation and legislative contexts in offshore decommissioning, ship recycling, health & safety, and environmental protection
- end-of-engineered life in other industries
- legal frameworks for offshore structures and activities, shipping and maritime activities and legal battles

- environmental, social, socio-economic, health, human rights and gender impact assessment
- communication with stakeholders, training, human factors
- structural integrity/health assessment and management
- monitoring, surveying and engineering testing protocols
- risk management & safety studies, process safety networks
- research and development of evidence bases
- facilities in which to trial new processes or protocols.

What I see as the biggest challenge for safer decommissioning of offshore structures and/or ships is …

Lack of:

- recognition of a problem
- infrastructure, including storage and disposal for hazardous waste
- required capacity and capability
- information or access to information
- sharing of knowledge
- evidence-based decisions and decision-frameworks
- understanding of mid- and long-term impacts
- appropriate and cost-effective technologies
- appropriate practices, standards, policies, regulation
- international best practice
- commitment by international community
- implementation/compliance and enforcement of regulation.

Other points noted included:

- inadequate or unspecific laws and regulation
- diversity of hazards
- scale of the problem and increase in number of facilities to be retired
- balancing cost/safety and environmental pressures or priorities
- ownership of risk and liability of offshore assets and ships
- disregard for environmental and human health/safeguarding communities
- translation of approaches from high-value to low-value economies

- uncertainty of asset integrity at end of engineered life/when to decommission
- volatility, uncertainty, complexity and ambiguity in design, building, operation and decommissioning
- decontamination of structures.

What I would like to see as the outcome to this challenge in five years' time is …

- recognition of the problem/greater awareness of end of life needs
- development of fit-for-purpose, flexible regulation
- compliance with regulation, enforcement of regulation and appropriate penalties for non-compliance
- commitment by industry to deal with their waste responsibly
- affordable technological solutions to carrying out work and measure the outcomes
- development and adoption of standardised approaches, pragmatic ground rules
- collaboration across the sector/a global transdisciplinary community
- international network/community
- knowledge exchange platforms across these sectors and with other sectors
- affordable, safe working conditions and minimal environmental impact
- circular economy principles adopted
- design for decommissioning principles adopted
- sustainable and responsible approaches, consideration of the environment in design and decommissioning plans
- evidence-based/research-informed strategies for decision making
- international strategy and global standards for safer ship recycling and decommissioning of offshore assets
- improved classification of offshore assets and identification of a legal framework
- effective measures to divert more ships and offshore assets to approved ship recycling facilities
- ratification of the Hong Kong Convention by all major ship recycling countries
- a measurable reduction in injuries and fatalities.

Live polling

A live poll in the opening session posed a series of questions to participants to highlight the range of expertise in the room.

- What type of organisation do you represent?
- Are you principally concerned with ship recycling or decommissioning of offshore structures?
- How many years of experience in the room?
- The workshop aim that most aligns with my interests is…
- Describe what you hope to get out of the workshop in one word!

Results are shown in Figure 3 to Figure 7.

The poll highlighted the balance of practitioners and academics, and of those principally involved in ship recycling and decommissioning offshore structures present in the room. The poll also demonstrated more than 800 years of combined experience in the shipping or offshore industries present in the room, and a collective desire to collaborate and to act to have an enduring impact on the safety of decommissioning offshore structures and ships.

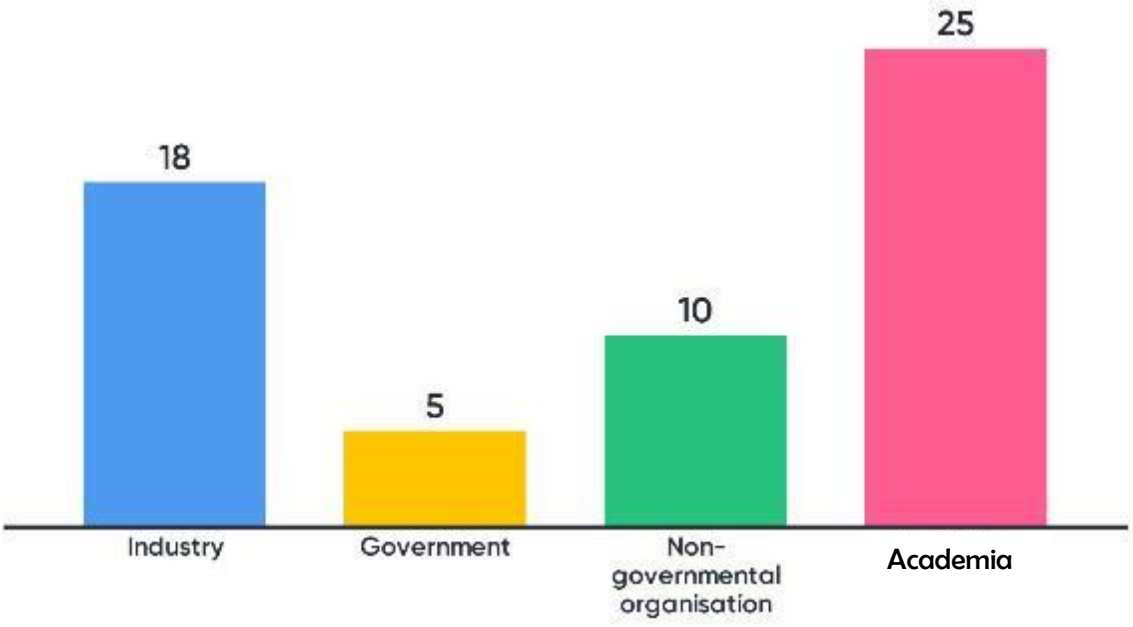


Figure 3. Live poll result – What type of organisation do you represent?

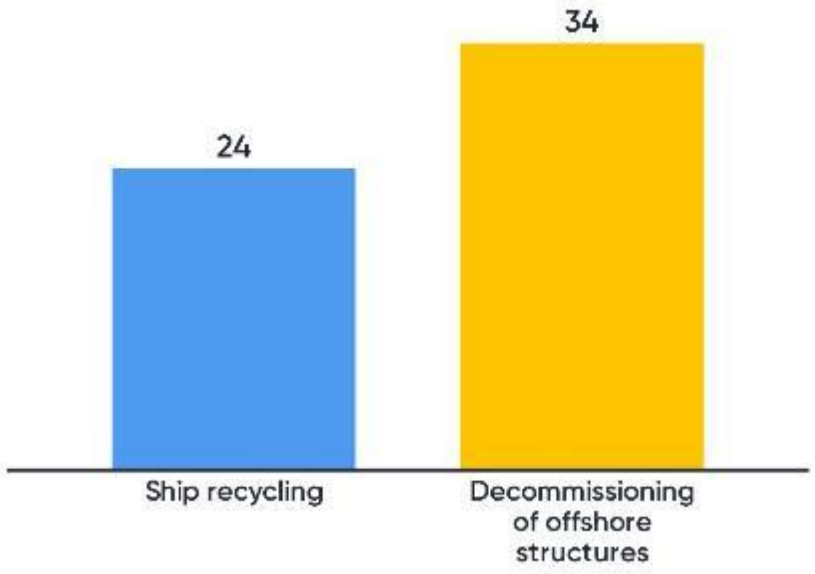


Figure 4. Live poll result – Are you principally concerned with ship recycling or decommissioning of offshore structures?

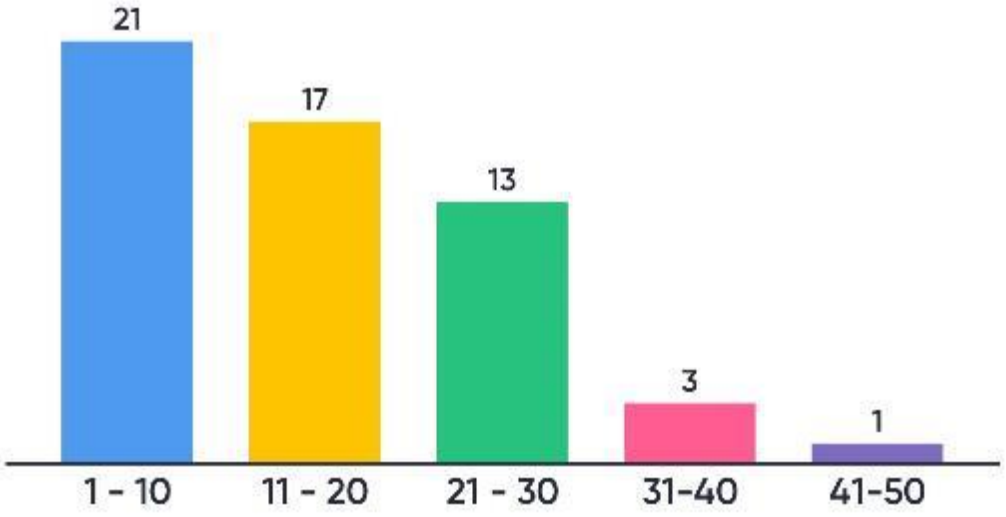


Figure 5. Live poll result – How many years of experience in the room?

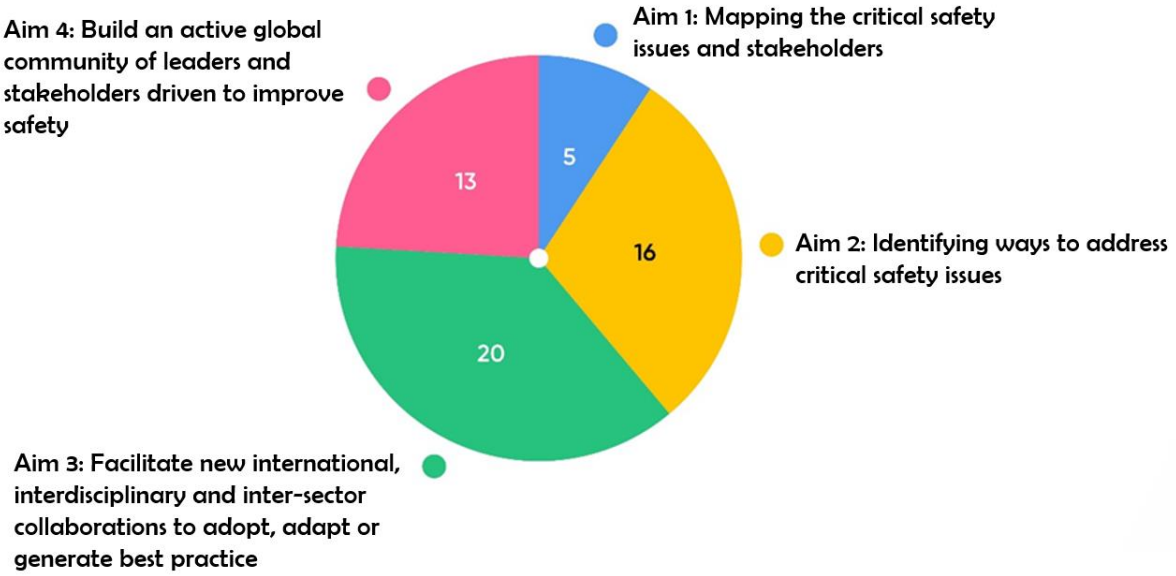
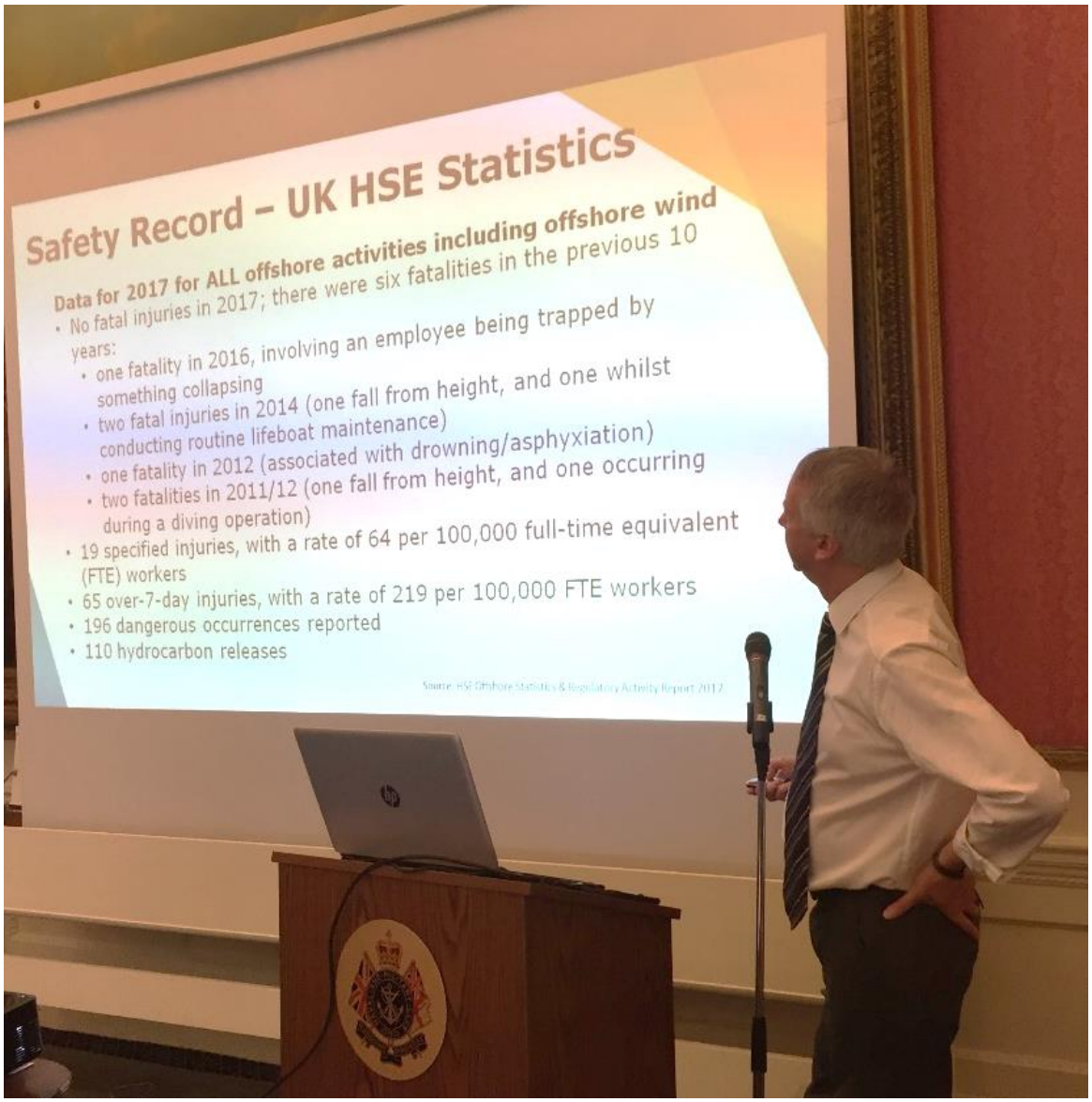


Figure 6. Live poll result – The workshop aim that most aligns with my interests is…

Figure 7. Live poll result – Describe what you hope to get out of the workshop in one word!



Richard Neilson, Director, National Decommissioning Centre (UK)

Invited presentations

Participant introductions were followed by two short (10 minute) invited presentations to provide context to the challenges and current state-of-practice in decommissioning offshore structures and ships.

Richard Neilson, Director of the National Decommissioning Centre, UK, presented *Offshore oil and gas and offshore wind decommissioning overview*.

Ingvild Jenssen, Founder and Director of NGO Shipbreaking Platform presented *Shipbreaking, understanding the risks and opportunities*.

Slides from the two invited presentations were provided to the participants in the post-workshop email.

Ingvild Jenssen, NGO Shipbreaking Platform

Identification of critical safety issues

A database of critical safety issues in decommissioning offshore structures and ships was collated through a small-group discussion using 'fish bone' cause and effect diagrams (Figure 8).

A problem statement – in this case a critical safety issue in decommissioning offshore structures and/or ships - is posed in the 'head' of the fish. Major factors that contribute to the problem are then identified and marked on the primary fish bones, and causes of the problem that are related to the contributory factor are collected along secondary fish bones. A range of 'fish heads' were provided (Figure 9) and participants were encouraged to offer alternatives.

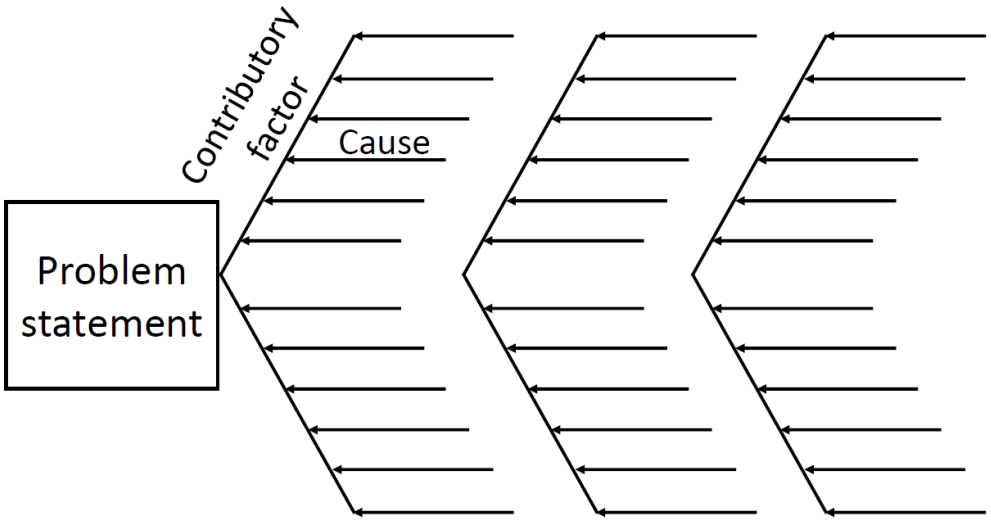


Figure 8. 'Fish bone' cause and effect diagram template

Injury or death of workers in ship breaking yards	Health effects of pollution of soil, sea and air from ship breaking yards	Injury or death of workers during offshore operations for decommissioning offshore structures	Injury or death of workers during onshore operations for decommissioning offshore structures

Figure 9. Example problem statements of critical safety issues in decommissioning offshore structures and ships for 'fish heads'

Of the 11 fish bone diagrams created addressing critical safety issues:

- Five considered 'Injury or death of workers in ship breaking yards'
- Two considered 'Injury or death of workers during offshore operations for decommissioning offshore structures'
- One considered 'Injury or death of workers during onshore operations for decommissioning offshore structures'
- One considered 'Health effects of pollution from decommissioning offshore structures'
- One considered 'Health and safety effects due to hazardous materials'
- One considered 'Environmental degradation and loss of livelihoods'.

Injury or death of workers in ship breaking yards

Contributory factors to the critical safety issues included lack of training and skills of personnel, inadequate infrastructure and working environment, poor processes for risk management and operations, inadequate law and ineffective law enforcement, business and government pressures/ownership of liability. More specifically falls, dropped objects, poisoning and explosion were highlighted as key contributors to injury or death.

Causes of injury or death of workers in ship yards included weak worker syndicates/unions, child labour, poverty, lack of alternative work, lack of consciousness of risk, lack of respect for human life, lack of tools and equipment including PPE, lack of nearby hospitals, lack of regulation, lack of inspection, lack of enforcement, fragmented systems, lack of clarity of regulatory authority, slow adoption of global regulation, lack of insurance cover or legal assistance, cost of providing better conditions, cash buying, corruption and bribery.

Injury or death of workers in onshore and offshore operations for decommissioning offshore structures

Contributory factors to the critical safety issues included those relating to people, infrastructure, processes, regulation and lack of information, similar to above.

Causes contributing to these issues included an insufficient safety culture, lack of training, lack of access to PPE, cultural/regional differences in perception of risks, and the parties bearing risk not being those that can address it; cost, supply chain, lack of research, lack of sharing good practice, lack of waste storage, treatment and disposal facilities; lack of

records and documentation; lack of ratification or compliance of regulation, lack of enforcement, lack of government and public awareness, conflict of interests, cost and politics.

Health effects of pollution from decommissioning offshore structures

Contributory factors were identified as unplanned releases, pathways, exposure, policy and regulation, onshore disposal and lack of knowledge.

Causes under these categories included infrastructure failure, accidents, human error, nature/environment; seawater, air quality, noise, contaminated land; no training, contamination of food chain; lack of awareness, inadequate standards, lack of resources and capacity.

Health and safety effects due to hazardous materials

Contributory factors were identified as operations, construction, monitoring, identification and disposal.

Causes under these categories included introduction of new hazards in a 'broken' process, lack of PPE; new composites (that are not understood), decreasing value of scrap; worker turnover, lack of medical checks, lack of environmental checks, lack of independence of checkers; non-compliance, inadequate or fake inventory of hazardous materials (IHM); poor treatment, facilities, and consideration of 'where does it go?'.

Environmental degradation and loss of livelihoods

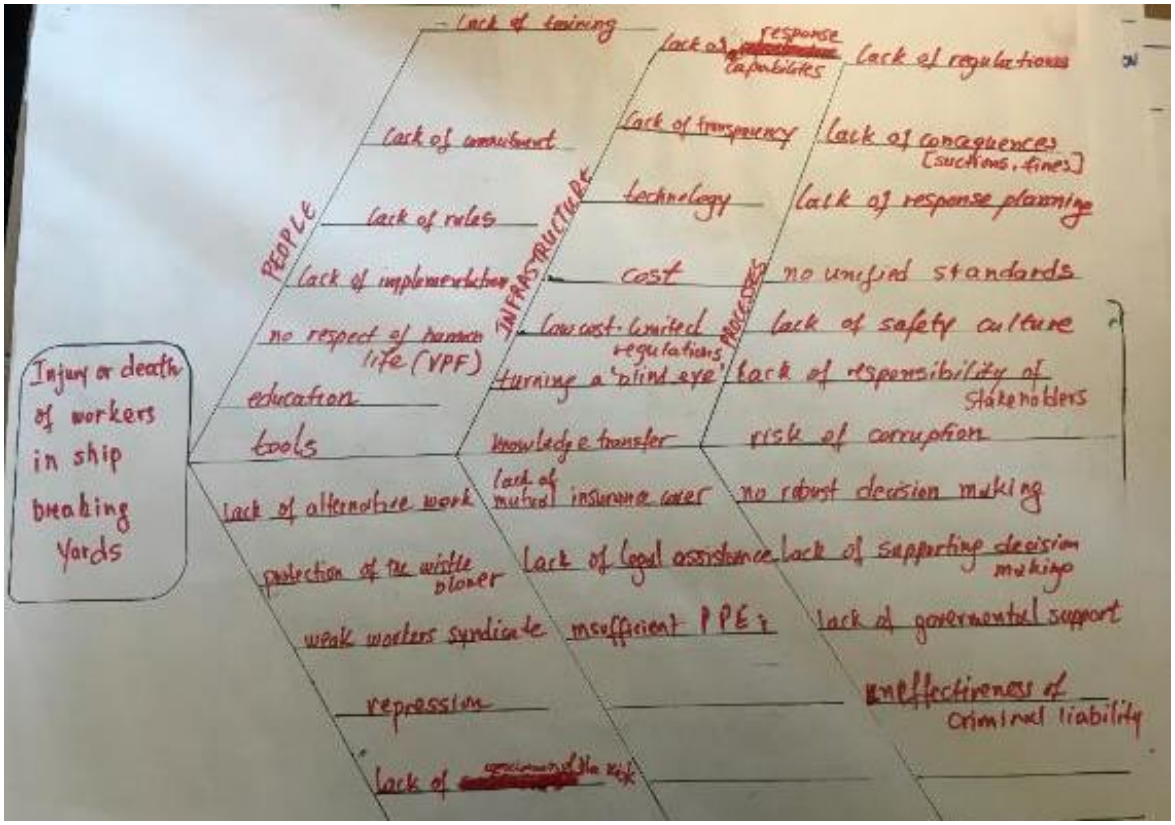
Individual contributory factors were not explicitly identified, but can be grouped around people, processes and practices, infrastructure and regulation, which in cases are weak and open to corruption.

Causes contributing to this critical safety issue were identified as lack of trade unions, de-sensitization and lack of awareness, poor safety culture, lack of consultation, lack of participation, poverty, negligence, human rights abuse, shifting guidelines, weak guidelines and penalties, cost & finance, weak or ineffective regulations, policies or standards and lack of research and evidence.

In summary, in all the cases considered, contributory factors to the critical safety issues centred around people, processes, infrastructure, regulation, business and government practices and knowledge. Causes varied, some common to different scenarios while others specific to

particular parts of the sector or particular regions. The activity highlighted areas where knowledge sharing could be beneficial and where sector or regionally specific solutions are needed.

Workshop participants brainstorming contributory factors and causes of critical safety factors in decommissioning offshore structures and ships for fish bone diagrams



Example of fish bone diagram created by a working group

Workshop participants present critical safety challenges, contributory factors and causes to the wider group

Identification of stakeholders

A database of national and international stakeholders in decommissioning offshore structures and ships was collected through a small-group discussion exercise. The results were collated on a digital platform to create a living database that can be augmented during the programme as new stakeholders are identified and connections made.

Snapshots of the database visualisation are presented in Figure 10 and Figure 11.

Participants creating stakeholder maps

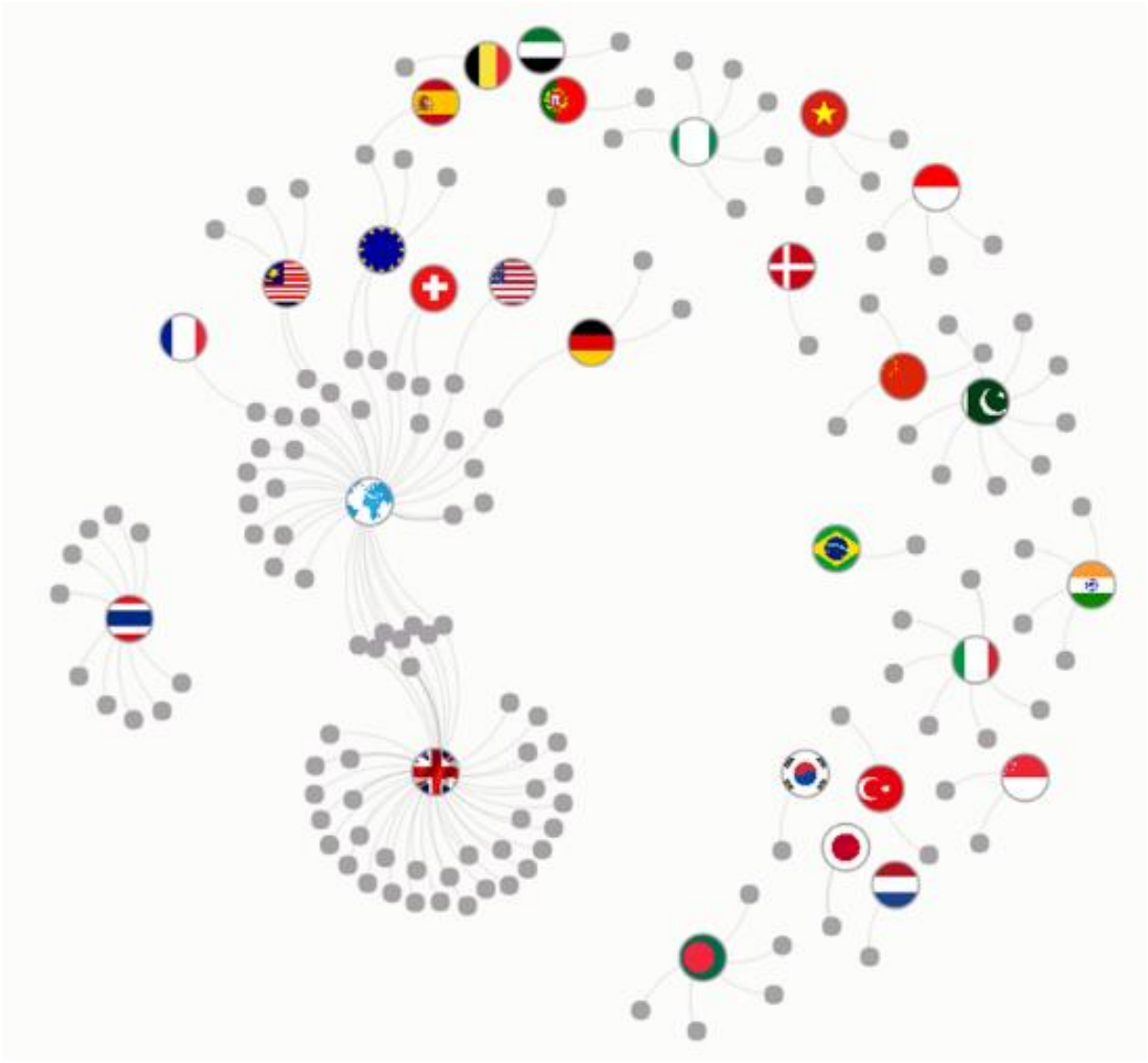


Figure 10. Digital representation of national and global stakeholders and connectivity for decommissioning offshore structures and ships created from stakeholder mapping exercise

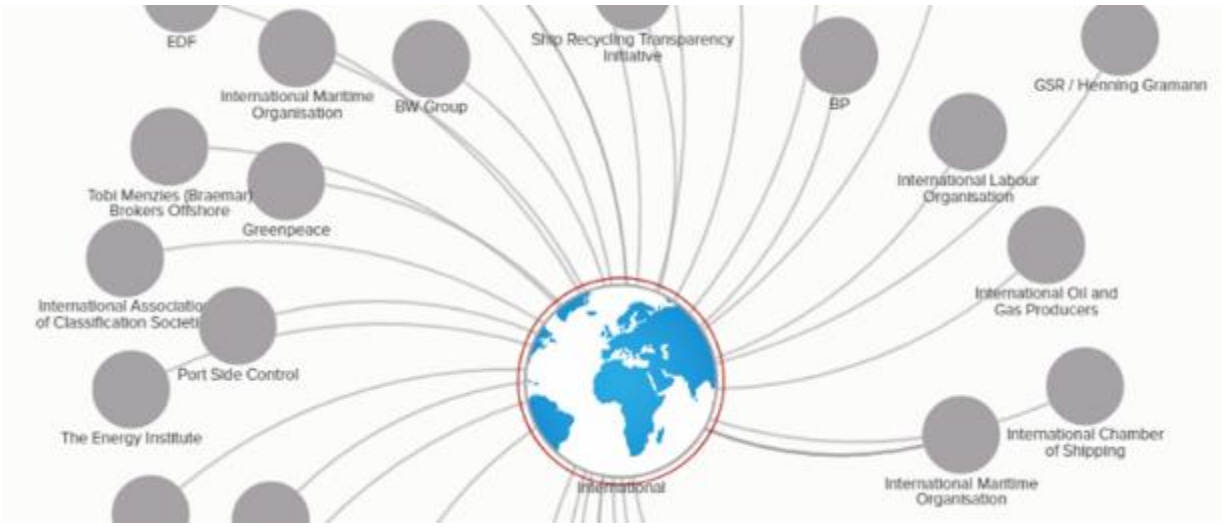


Figure 11. Zooming in on the stakeholder map shows individual stakeholders by name

Aspirations for state-of-practice in 5, 10 and 25 years and levers for change

The cause and effect 'fish bone' diagram activity created a bank of critical safety issues, contributory factors and causes of those safety issues. The next step was to consider a state-of-practice that participants would like to see achieved in the industry in the short, medium and long term - and the levers for change to address the identified causes and contributory factors to reduce the incidence or impact of the safety issues.

The aspirations and proposals for change collected by the groups are summarised below.

Short term – less than five years

- Clarity of responsibilities of asset owners, governments etc.
- Policies for impartiality and independence of processes, agencies, reports.
- Ratification and implementation of the Hong Kong Convention.
- Development of International Guidelines for decommissioning offshore assets in line with Hong Kong and Basel conventions.
- Standards for training and education.
- Standardisation and harmonisation of industry practices.
- Funding and government support.
- Transparency and reduction of corruption.
- Independent compliance monitoring.
- Knowledge sharing/exchange.
- Improved baseline data sets.
- Better public understanding.
- Reduction in number or severity of incidents and accidents.

Medium term –10 years

- Tighten Hong Kong Convention.
- Regional cooperation of stakeholders.
- Standard operating procedures.
- Embedded safety culture.
- Improved infrastructure and ship recycling facilities.
- Improved waste management infrastructure.
- Reduction in number or severity of incidents and accidents.

- Design for decommissioning or reuse/life-cycle product design.
- Risk-based framework for benefit and comparison.
- Research and knowledge creation to better understand problems and find solutions.

Long term – 25 years

- Global cooperation (in developing, implementing and enforcing safety measures).
- Appropriate infrastructure globally.
- Zero-waste design, established design approach for decommissioning or recycling/no hazmats.
- Automation to remove people from hazardous spaces.
- No accidents or deaths.

Levers for change

The identified levers to effect changes in the state-of-practice to realise the short, medium and long-term effects outlined above can be categorised as:

- Governments
- Regulation
- NGOs, Unions or public pressure
- Financing
- Evidence
- Research
- Education
- Technology
- Global networks for knowledge sharing and raising awareness.

Effective solutions must recognise the complexity of the global, regional and local environment as well as the inter-related and often competing priorities of the different stakeholders.

Governments, regulators, financiers, asset owners, operators, workers, researchers, trade associations, NGOs, and learned societies all have a role in improving safety through raising standards, improving consistency and spreading the implementation of best practices in the global handling of the decommissioning of offshore systems and ships.

Participants share their goals for the industry for the short, medium and long-term and levers to effect changes

Planning for day two

The formal proceedings for day one concluded with the Chair of the Programme Board and workshop convenor presenting the process for the follow-on call for expressions of interest for proposals and the plan for day two, which was set aside for development of outline proposals. The information was also included in the Welcome Pack that was provided to the participants ahead of the workshop.

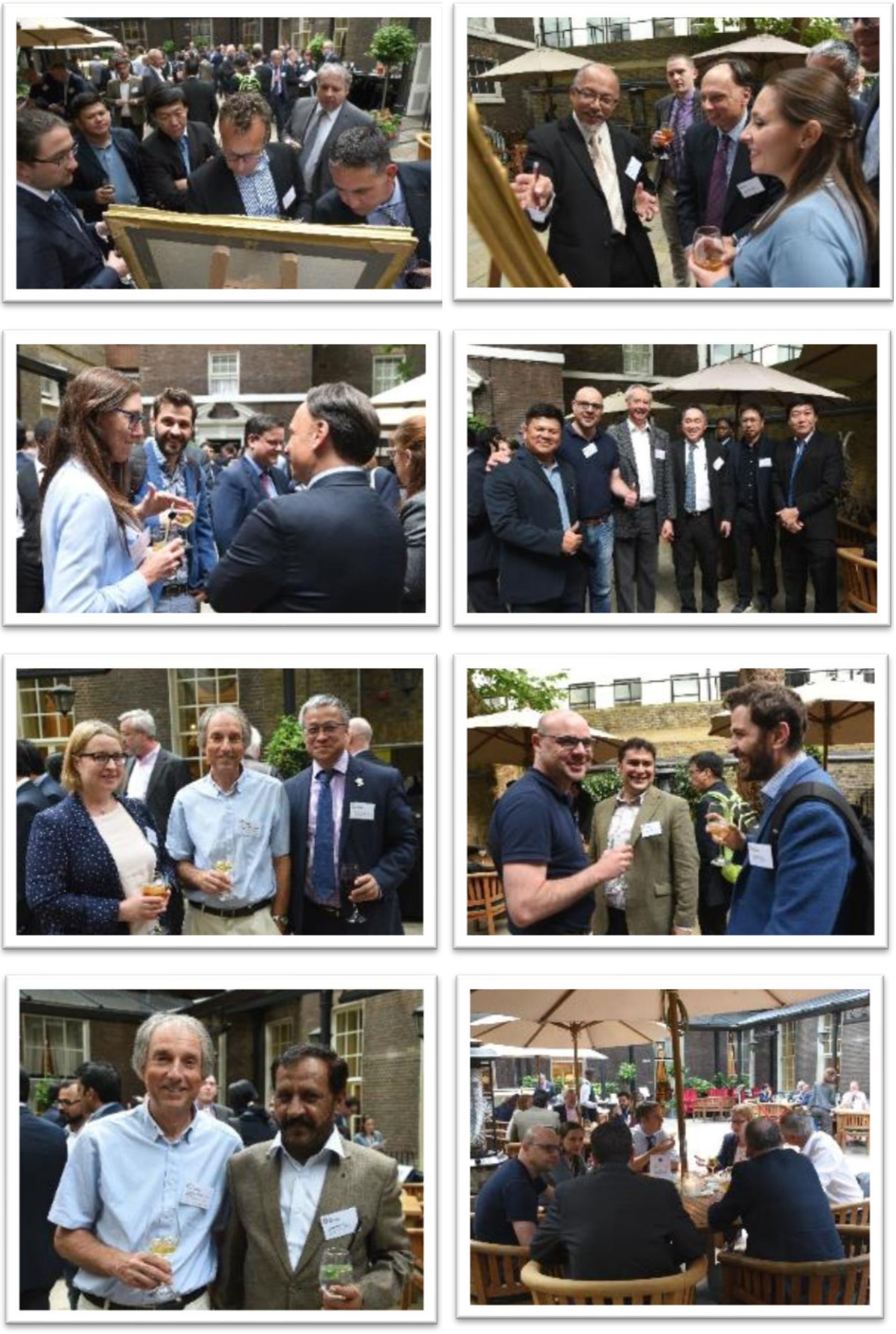
Participants were invited to propose project titles and to self-select groupings for working on outline proposals the following day.

Overnight, the Programme Board, convenor and Academy staff selected the 9 outline project titles to be taken forward to the next day and finalised the groupings to ensure geographical and cross-sector balance in each group.

Participants proposing project titles and signing up for working groups for day two

Networking social event

An evening reception with drinks and a barbeque at the close of day one provided an opportunity for the participants to network further and discuss projects and groups to take forward to the next day. It also provided an opportunity to relax together after a busy day of workshopping!



Networking social event

Development and presentation of outline proposals

Participants were informed of the final project titles and groups on their arrival for day two of the workshop.

The project titles selected were chosen or merged from those suggested by the participants. The projects adopt or adapt best practice from other regions or other sectors, or create new knowledge, in alignment with the mission and objectives of the workshop and programme.

The project titles developed on day two were:

- Developing facilities for vocational training and education
- Quantifying the problem – baseline parameters
- Designing platforms for knowledge exchange
- Safe and sustainable decommissioning of fixed offshore structures in the ASEAN region
- Hazardous waste - management and decontamination
- Circular economy - increased value extraction from end of life marine assets
- Risk based design and improvement
- Digital enablers for safety - full provenance from construction to operation to end-of-life
- Structural integrity management with decommissioned offshore structures

The morning of day two was devoted to developing outline proposals according to the guidelines provided, and the afternoon was devoted to each group making a 10-minute presentation of their proposal to all participants and the Programme Board. This was followed by 10 minutes of feedback from the Programme Board and wider group.

Following presentation of each outline proposal, groups put forward one individual to lead development of the expression of interest for the funding call following the workshop.

The guidelines included eligibility, boundary and assessment criteria. These were provided in the Welcome Pack and as handouts to each group for the activity and are set out below.

Eligibility and boundary criteria

- Applications must be submitted by a Project Leader who agrees to be responsible for the direction and coordination of the project and partnerships if funded.
- All partners must agree to being involved with the application, agree upon the workplan and commit to fulfilling their part through the course of the project.
- Applications should be made for discrete projects worth up to £50,000 (GBP) per year for up to five years (flexible).
    - Applicants are eligible to put in several applications.
    - Applicants must make it clear whether their projects can work together with other applications or are to be treated as individual projects.
- Each application must demonstrate matched contribution of at least 50% of the grant value. The matched contribution can be in-kind or direct financial (or a mixture of both) and can be from any of the partners being proposed. Your match will be assessed based upon the amount and the quality/ value addition of the contribution.

Format and assessment criteria

1.1 Project title

Please provide a project title. Should the application be successful, this title will be listed on the Academy's website.

1.2 Summary/abstract

The project summary should provide a brief overview of your aims, the programme of activities and the benefits of the activities to be undertaken during the project. The summary should be written in language that can be understood by a non-specialist reader (maximum 300 words).

1.3 Applicant details and roles

Please upload one document with narrative summary details of the lead and all partnering institutions as well as their roles and contributions. Descriptions of each organisation and what they will be contributing should be no more than 100 words per partner.

1.4 Project context, baseline and evidence base:

Please articulate the context within which your initiative is taking place, the challenges, needs and opportunities being met and its relation to best practice technically and in your context. Please also include baseline data points that reflect the existing safety challenges where possible.

1.5 Goals (what) and objectives (how):

Start by identifying and writing clear goals and objectives for the project, if possible making them as specific, measurable, achievable, realistic and time-bound (SMART) as possible. Goals are broad statements about 'what' the project will accomplish. Therefore, projects may have more than one goal, but several objectives for each goal. Objectives are very specific statements about each goal explaining 'how' you would achieve the goal. Each project goal may have many objectives to achieve the goal.

1.6 What metrics for success would you consider suitable for the project?

Please give up to five specific indicators and targets you hope to achieve with the project to demonstrate success in bullet point form.

1.7 Stakeholder analysis:

Identify and list the project audience, stakeholders/public, who might be interested and benefit from this project as well as those who might oppose. Also, describe the 'how' and 'what' benefits/detriments they will get when the project goals have been achieved.

i) For stakeholders: consider the relative interest each group or organisation has in your work, and their relative influence over your ability to achieve your impact goals. This influence could be negative (blocking you from achieving impact) or positive (enabling you to achieve things that would not have been possible without their help).

ii) For public: in addition to considering their relative interest in your work, consider the extent to which different groups (for example, demographics or interest groups) might benefit from the project.

1.8 Audience engagement:

Identify and demonstrate a specific set of activities ensuring that potential project audience, stakeholders/public, can engage with the project to achieve the project impact.

1.9 Activities timeline:

List key project activities in a timetable, which demonstrates the sequence of activities for producing the project deliverables.

1.10 Deliverables and risks:

Describe the project key deliverables and list all the risks that could jeopardise the delivery of the deliverables. Describe methods and approaches for mitigating the risks to achieve project impacts.

1.11 Funding request: Describe the amount of fund/grant you are requesting for the project and the expected split between partners. Also, explain match contributions from your organisation or any other stakeholders.

1.12 Conclusion: Summarise the overall project and state how you would turn the project ambitious goals to the intended impacts (changes) that may not occur without contribution of this particular project.

Participants developing outline proposals

Participants present outline proposals

Feedback from the Programme Board on presented outline proposals

Tweets from the workshop

Workshop wrap-up

Chair of the Board, William Powrie wrapped up the workshop, thanking all those involved in development and participation of the workshop. The key themes from the workshop and the key dates for the next steps were reiterated, in particular the process and timeline for the follow-on expressions of interest for proposals.

Workshop Convenor, Susan Gourvenec, added her thanks to the Programme Board, William Powrie (Chair), Andrew Clarke (the Academy), Ruth Boumphrey (Lloyd's Register Foundation), Steve Gilbert (Lloyd's Register) and additional panel member, Jan Przydatek (Lloyd's Register Foundation); the Royal Academy of Engineering staff, in particular Programme Officer for this mission, Hazel Ingham, and also Shaarad Sharma, Shelley Stromdale, Wahid Azizi, Sebastian Scott, Coco Burch and Ben McAliden for their contributions before and during the workshop; the staff at the venue for hosting us so well; and all the participants for their interest in being part of this programme, and for their commitment to the pre-work and intensive two days of activities.

A final live poll asked participants to describe the workshop in one word before the workshop was formally closed. Results are shown in Figure 12 and illustrate an uplifting selection of sentiments, which could be felt in the room as clearly as displayed on the screen!

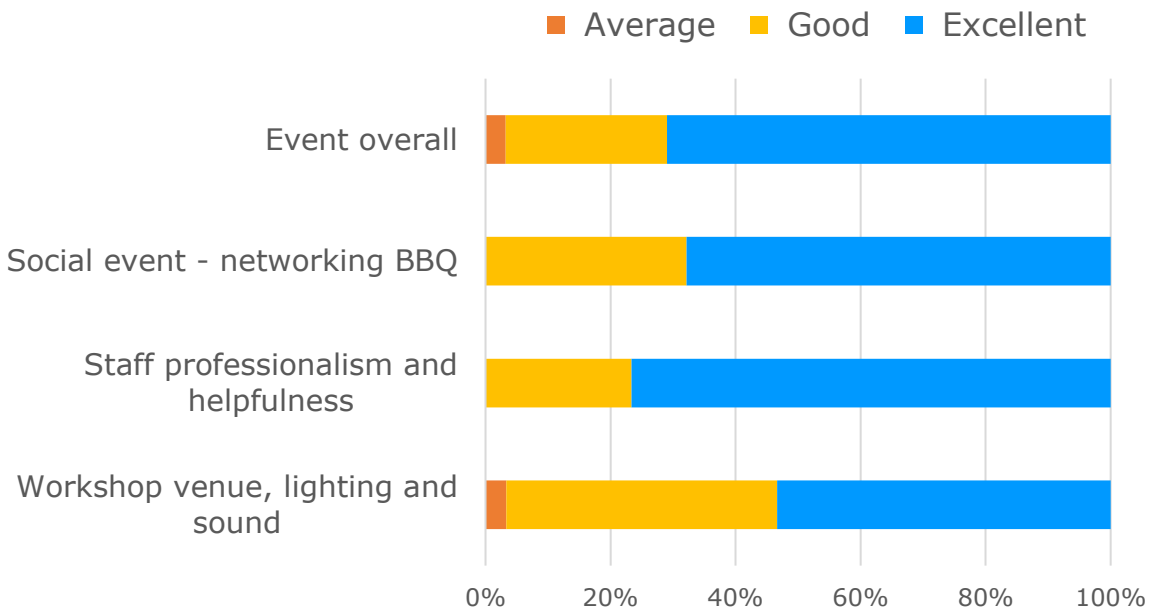
Figure 12. Describe the workshop in one word!

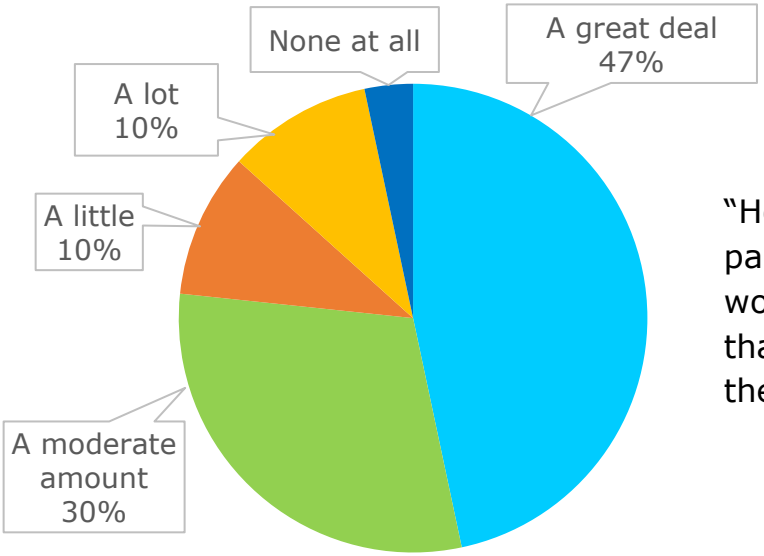
6 Post-workshop activities

Survey results

An online survey was distributed to all participants a week after the workshop to gain feedback on the workshop. The results indicate an overwhelming positive response to the event and desire to stay involved in the programme. 31 out of 58 participants responded to the survey and some specific results are highlighted below.

- **84%** found all the sessions 'Excellent' or 'Good'
- **93%** plan to remain involved in the projects
- **100%** would like the workshop to be repeated





"How much has participating in this workshop changed the way that you plan to approach the issues addressed?"

Expressions of interest for funding call

The expression of interest form went live on the Academy's grant management system three weeks after the workshop (on 2nd August) with a deadline of 31st August 2019.

Participants were encouraged to tap into the expertise at the workshop and their wider networks.

16 submissions were made, 12 based on groupings formed at the workshop and four from new groupings developed with the participants wider networks.

Tweet from The Royal Academy of Engineering about the expressions of interest for proposals

7 Concluding remarks

The workshop hosted on 8 and 9 July 2019 in London was a first step in the partnership between the Royal Academy of Engineering and Lloyd's Register Foundation to address fundamental safety challenges in decommissioning offshore structures and ships across the world.

The workshop brought together 58 participants from academia, industry, policy makers and NGOs from 21 countries who are engaged in a range of aspects of decommissioning of offshore structures and/or ships.

A large database of critical safety challenges, contributors and causes were collected from the diverse expertise present at the workshop. This was balanced with collection of a database of stakeholders, priority areas for change and levers for change to have transformative effects in the safety of decommissioning of offshore structures and ships.

During the workshop, international, interdisciplinary and inter-sector collaborations had been developed and nine outline proposals to solve challenges and improve safety in the decommissioning of offshore structures and ships had been developed.

The workshop marked the start of building an active global community of leaders and stakeholders to have lasting and impactful collaborations to improve safety in decommissioning of offshore structures and ships.

At the time of issue of the report, the Programme Board were reviewing the expressions of interest for proposals. Selected applicants will be given further feedback and invited to develop their ideas into full proposals

The Academy will play a proactive role in assisting applicants to develop their ideas, offering to connect participants and wider stakeholders where they see interests align, and suggest ideas to applicants if gaps across the portfolio of project applications are evident.

Thank you

Thank you for your participation in the *Safer decommissioning of offshore structures and ships* workshop and for you continued interest in the programme.