

Cross-Industry Decommissioning  
Themes of Common Interest

Theme	Commonality between Decommissioning of Nuclear - Oil & Gas - Offshore Wind Industries	Defence	Space	Process	Renewables	Waste
Project Management	Management of large complex projects that exhibit similar characteristics e.g. brownfield. Efficiency of scope aggregation (fleet) approaches to multiple sites; pooling of project / engineering team / vessel resources across projects. Uncertainties associated with ageing infrastructure; uncertainties related to characterization of inventory; approaches to demolition / dismantling. Transition from operations to decommissioning; cultural leadership & transitions / change management / EDI; building project delivery capability fit for decommissioning. Performance reporting approaches. Brand / Reputation Resilience; re-assuring the public / building public confidence; reputation threat mitigations / opportunities. What happens when things go wrong (e.g. Brent Spar, Fracking, 2014 Geologic Disposal Facility)?					
Commercial Models	Decommissioning requiring a different mindset to risk transfer; difficulty in developing novel / fit-for-purpose commercial models for decommissioning in industries that have well-established commercial behaviours. Lessons learned from Nuclear include for example; Parent Body Organisation (PBO) model versus wholly-owned subsidiary models; Programme & Project Partner (PPP) model. LL from O&G include for example; bundling scope into campaigns across fields and across operators. Opportunity to turn net cost into profit by bundling decommissioning operations (e.g. offshore wind subsea cables).					
Supply Chain	Supply chain opportunities; barriers to entry; how are they advertised and procured. Measures to ensure support for UK based jobs; Social Value; Supply Chain Action Plans. Government versus private sector procurement rules. Support for SMEs. Taking advantage of R&D Innovation grant funding, nationally, regionally & across sectors to develop expertise. Platforms for sharing innovation and collaboration.					
Technical Innovation	Developing new technologies, techniques, systems & processes to solve difficult and complex decommissioning challenges. Innovation centres / organizational models / campaigns; grand challenges. Specific technologies; robotics; land / sub-sea / aerial ROVs / AUVs / drones; characterization of as-built condition; IT / digital / AI techniques; impermeable barriers; under-water laser cutting; explosives; vibrating hammer foundation removal; automated detection & removal (e.g. sub-sea cables). Joint calls for academic research.					
Cost and Schedule	Ability to compare (transparency in) cost and schedule estimates & outcomes, in a timely manner, across the process of decommissioning; sector premiums. Accelerating the reduction of risk (schedule), and reducing the decommissioning provision (cost). Drivers of cost and schedule over-runs may be different in nature from enablers of cost and schedule reductions and may need exploring separately. Challenges in accurate estimation. Good practice in approaches to; benchmarking; reference class forecasting; probabilistic forecasting; optimism bias removal. Workfront productivity / 'tool-time'; performance management. Challenges in annual budgetary cycle versus business planning cycle.					
Late Life Asset Management	Managing the final phases of an asset's life to optimise its productivity whilst maintaining its integrity and preparing it for decommissioning. Efficient overlapping of late operations and onset of decommissioning; minimizing duration of warm stacking; managing trade-offs between OPEX and ABEX; cultural change and leadership during transition.					
Policy & Regulation	Multiplicity of agencies covering regulation onshore and offshore, together with changing legislation. Level-playing fields between industries. Common approaches to future regulation / challenging of existing treaties; governance structures. Implications of Brexit for changes to policy. 'Social Licence to Operate' and supportive communities. Commercial viability / desirability of decommissioned end-states / approaches? Efficient regulation within environmental, economic and social contract boundaries. Full costs of leaving <i>in situ</i> versus removal. Common high levels of regulatory oversight.					
Attracting Talent & Building Capability	Competition with new build / development and operations for attracting and retaining diverse talent. UK depth of experience throughout the supply chain; capability development; transferability of skills; long term job creation in areas facing decline or change; ageing workforce. Exportable UK expertise.					
Sustainable Regional Economies	Learning lessons from changing primary, regionally based economic activity into something more resilient and sustainable. Strong HMG drive to use SMEs for driving innovation and creating new jobs. Aberdeen has some unique challenges, comparisons can be made to experiences in Nuclear dependant areas such as West Cumbria and Anglesey where diversification projects have been in progress for several years.					
Net Zero & Environmental Sustainability	Government and market trends which will impact all industry and sectors, such as the energy transition and 2050 Net Zero. Opportunity to repurpose on-shore and off-shore assets for other uses, including industrial and ecological, e.g. H <sub>2</sub> production, CO <sub>2</sub> capture and storage. Design for re-use. Low-carbon manufacturing. Recycling; polymer turbine blades; uncontaminated steel structures; contaminated metals; management of waste streams.					
Standards	Aligning standards (removing duplication and improving consistency; across industries; internationally). Streamlining standards for decommissioning versus new-build. Road-map and funding for industry groups. Standardised methodology for review and issue of standards.					