

Offshore Infrastructure Asset Management

Developing guidance on the sustainable design, maintenance, removal and decommissioning of offshore infrastructure assets



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About CIRIA

CIRIA is the Construction Industry Research and Information Association, a neutral, independent and not-for-profit member organisation.

Our vision is to be the leading enabler and preferred partner for performance improvement, to drive collaboration across the built environment and construction sectors to research, develop and transfer knowledge.

CIRIA Products

CIRIA delivers robust, authoritative and independent good practice guidance applicable across sectors and designed for a range of users, from policy makers to practitioners.

Our guidance is developed collaboratively with industry and academic experts. Our methods ensure consensus, quality and the latest thinking underpin everything we do. Our work contains case studies to share knowledge and illustrate practice through examples.

We raise awareness of our good practice guidance through training, events, communities of practice, social media, blogs and press releases. Key messages from our projects are widely disseminated to help embed good practice into industry.

CIRIA Research Ambitions

CIRIA's 60+ year history and future purpose are aligned to our ambitions, designed to make a tangible difference to the sectors in which we work. We take a holistic, systems-based approach to critical industry challenges within our 5 core research ambitions.



Embedding
Sustainability



Achieving Net
Zero Carbon



Increasing
Resilience



Improving
Delivery



Harnessing
Innovation

Offshore Infrastructure Asset Management

A guide to the sustainable design, maintenance, removal and decommissioning of offshore infrastructure assets

Justification

The UK is reliant on offshore infrastructure to maintain supply of power, energy, fuel and data. This reliance is becoming increasingly crucial as we move away from fossil fuels towards more sustainable energy solutions and an ever-developing interconnected digital world. Evidently, the risk of disruption to any of these poses a great threat, both socially and economically.

The threat of damage to existing offshore infrastructure puts the UK public, businesses and economy at risk of major disruption. This presents a vital need to protect existing assets, such as subsea pipelines and cables, to ensure the country has an uninterrupted supply of communication, data and power services. Inherently, this highlights requirements to design, install and maintain any new structures to the highest quality, with the most up-to-date research and innovations.

With many islands across the UK being solely powered by very few cables, damage to just one can lead to complete disconnection with the digital world, which we are becoming increasingly reliant on for day-to-day activities. Striking examples include incidents in the Shetland Islands (2022) and Western Isles (2020) where alternative fuel was required to maintain crucial systems after cable damage.

Clear goals have been set by government stating that 100% of UK electricity will come from clean energy sources by 2035. It is clear that the balance of fossil fuel usage and green energy will drastically change. Carbon footprint and emissions targets of achieving net zero by 2050 highlight the aim to phase out the use of unsustainable methods of energy generation, and transition to greener technologies such as wind and other renewable sources. This presents a range of challenges moving forward, from decommissioning of existing infrastructure no longer required, such as pipelines used for fossil fuel transportation, to the installation of new cable systems to cope with the increase in demand for transport of electricity.

Clearer guidelines, collaboratively produced and reviewed by offshore industry leaders, would help to inform the wider construction sector of good-practice methods, with consideration of the most up-to-date research and techniques available. Being a global issue, examples exist across the world, and there is a need to inform a wider audience of successful and unsuccessful asset management of offshore infrastructure.

Proposal & Products

CIRIA propose the development of good-practice guidance focusing on the design, maintenance and removal of offshore infrastructure assets. With the topic of offshore infrastructure being rather extensive, this guide will focus on energy generation, offshore cables, pipelines and any other associated connections to key energy stations (e.g. Wind turbine structures).

The proposed approach involves creating a consortium of offshore infrastructure asset owners, policy makers, governing bodies, energy providers, consultants and contractors who are experienced in offshore asset management. Expertise from each of these perspectives can contribute enough knowledge and experience, and provide case studies that help to achieve the goals of this guidance document.

A CIRIA guide will demonstrate the necessity and impact of better management of our offshore infrastructure, clarifying its role and benefit to UK energy targets. Keeping sustainability at the heart of the guidance, the guide will explore 'greener' options where possible and discuss the importance of circular approaches by addressing the removal and re-use of decommissioned assets. The guide will act as a consolidated source of existing documentation widely accepted within the offshore industry.

Scope

The guide will focus particularly on:

- An overview of the current offshore infrastructure industry.
- A summary of common challenges causing energy disruption and a detailed summary of response methods/techniques.
- Infrastructure asset design, life-cycle, maintenance, replacement, removal, circular economy.
- Case studies showcasing past schemes, techniques used, challenges, lessons learned.
- Advice on common scenarios, cross-sector learnings and how to approach collaboration as a means of responding to disruption events.
- Recommendations on future industry developments to contribute to UK targets.

Indicative Timeline



Why invest in a CIRIA project?

The benefits to your company from contributing to our projects

Our reputation

Our reputation in the industry is long established and widely recognised. The principles of quality, sustainability and collaboration have been a foundation for what we do for many years.

Our downloads

Our Guidance is downloaded over 50,000 times per year



Our reach

Our members and downloads span over 50 countries worldwide



The benefits of being involved in a CIRIA project are various:

- Deliver significant corporate value for modest levels of investment.
- Raise awareness of your corporate brand through logo on outputs and submission of case studies and content.
- Network with peers, clients and thought leaders in the sector.
- Get your message heard and influence industry direction.
- Demonstrate tangible leading contribution to improvement in the sector, fulfilling ESG goals
- Provide CPD for your staff, aiding routes to chartership and personal career growth
- Assist future work winning through involvement with industry leading good practice

Want to know more?

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