



Health & safety guidelines for offshore wind

An analysis of Ireland's
existing legal framework

June 2023

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Study finding Group:



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Executive Summary

The offshore renewable energy (ORE) sector in Ireland, and particularly offshore wind, will result in increased marine survey, construction and operations and maintenance activities over the coming years as Ireland aims to deliver the 7 GW target for offshore wind by 2030. At present, there is no available national offshore health and safety guidance providing information to the industry on the health and safety ORE legal framework for the offshore wind industry. The Wind Energy Ireland Offshore Safety Working Group have identified the need for an industry specific guidance document to be developed to provide direction and clarity for developers and supply chain companies regarding the legal requirements and best practice advice for this emerging sector.

BlueWise Marine was appointed by Wind Energy Ireland and Green Tech Skillnet to undertake an initial gap analysis study to identify shortcomings or gaps, if any, in Ireland's current health and safety legal framework as it applies to offshore renewable energy. This work was funded by WEI members and undertaken in collaboration with industry stakeholders and incorporates feedback from the WEI Offshore Safety working group.

The "[Offshore Wind and Marine Energy Health and Safety Guidelines 2014: Issue 2](#)" developed by Renewables UK (RUK) was adopted as the principal benchmark guidance document for safety in the offshore industry for the purpose of this gap analysis. Best practice and guidance from other bodies (e.g., GWO, G+, IMO, IMCA, ICAO) was also considered. The RUK document was chosen as the benchmark document for several reasons. Firstly, the United Kingdom (UK) and Ireland have a similar legal framework foundation. Secondly, due to the proximity of Ireland to the UK, as well as our shared border with Northern Ireland, non-conflicting regimes would benefit developers and contractors who are likely to be operating in both the UK and Ireland. Similar guidance would be beneficial in other areas as some government authorities share transboundary operations, such as the Irish Coast Guard and the Maritime and Coastguard Agency.

This document summarises the findings of the gap analysis including feedback gained from WEI Offshore Safety Working Group and relevant national stakeholders associated with Irelands ORE, marine and maritime sectors.

Ireland's health and safety legal framework refers to current legislation, its supporting industry and national guidance, and its regulation which includes regulators and national authoritative agencies. The Gap Analysis considers all phases of an offshore wind farm project lifecycle and focuses on the offshore aspects of ORE projects only.

The gap analysis exercise resulted in the identification of 65 references in the RUK document, consisting of various types of legislation and guidance (see section 2.1). When mapping the identified references to Ireland's health and safety legal framework, 61 pieces of comparative/reciprocal Irish legislation and guidance were identified. The analysis found that 90% of the benchmark standards in the RUK document mapped directly to an existing equivalent standard in the Irish health and safety legal framework. A total of two gaps were found relating to aviation regarding offshore landing areas for offshore helicopter pads and winching requirements. Four partial gaps in the areas of maritime / marine and electrical health and safety were identified.

This study found that there is substantial legislation and guidance at international, European, and national level already in existence to guide the development of ORE projects. However, there is a need for an overarching health and safety guidance document to inform and provide clarity to operators in the Irish ORE sector. As a result of this work, it is recommended that a national Offshore Renewable Energy Health and Safety Guideline document is developed. This work has resulted in a number of recommendations on the scope of such a document and next steps required to feed into this development.

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Abbreviations

Abbreviation	Meaning
ACOP	Approved Code of Practice
BWM	BlueWise Marine
CAA	Civil Aviation Authority
CAP	Civil Aviation Publication
COP	Code of Practice
CRU	The Commission for Regulation of Utilities
EC	European Commission
EEZ	Exclusive Economic Zone
EHSR	Essential Health and Safety Requirements
EU	European Union
EPA	Environmental Protection Agency
ERT	Emergency Response Teams
ESB	Electricity Supply Board
GWO	Global Wind Organization
HSA	Health and Safety Authority
HSE	Health and Safety Executive
ICAO	International Civil Aviation Organization
ILO	International Labour Organization
IMCA	International Marine Contractors Association
IMO	International Maritime Organization
IRCG	Irish Coast Guard
ISO	International Organization for Standardization
MAIB	Marine Accident Investigation Branch
MCA	Maritime Coastguard Agency
MCIB	Marine Casualty Investigation Board
MoU	Memorandum of Understanding
MSO	Marine Survey Office
NI	Northern Ireland
ORE	Offshore Renewable Energy
PANS	Procedures for Air Navigation Services
PTO	Power Take Off
RUK	Renewable United Kingdom
SARPS	Standards and Recommended Practices
S.I.	Statutory Instrument
SOLAS	Safety of Life at Sea
WEI	Wind Energy Ireland

1 Introduction and Scope

1.1 Overview

The Offshore Safety Working Group of WEI initiated a work stream to lead to development of suitable Health and Safety Guidelines for Ireland's offshore renewable energy industry. There has been agreement within the group to adopt the Renewables UK "Offshore Wind and Marine Energy Health and Safety Guidelines 2014: Issue 2" as the benchmark document for safety in offshore industry in Ireland, while also including best practice and guidance from other bodies such as GWO, G+, IMCA, IMO, etc.

The first step in drafting a suitable Irish guidance document is to undertake a gap analysis to identify shortcomings and gaps (if any) within Ireland's health and safety legal framework as it applies to offshore renewable energy, in collaboration with industry stakeholders and incorporating feedback from the working group. BlueWise Marine have been appointed to undertake this gap analysis on behalf of the WEI Offshore Safety Working Group.

This document summarises the findings of the gap analysis including feedback gained from workshops that were held with the WEI Offshore Safety Working Group and relevant national stakeholders associated with the offshore renewable energy industry, in Ireland and Irish maritime areas.

1.2 Objectives

The objective of this gap analysis is to present the findings of existing health and safety ORE legal frameworks in similar jurisdictions and analyse the existence of similar requirements and mechanisms within Ireland's health and safety legal framework. Further to this, the gap analysis aims to outline shortcomings (if any) in Ireland's existing health and safety legal framework applicable to ORE and implications to the industry.

The objective of the gap analysis report and recommendations is to present the information found in the Gap Analysis of the benchmark document and to include recommendations to close any gaps or partial gaps identified in Ireland's health and safety legal framework, applicable to ORE.

1.3 Scope

The scope of the gap analysis was to include a review of the current Irish health and safety legal framework as it applies to the development of ORE within the Irish Exclusive Economic Zone (EEZ) or the Irish Maritime Area. Ireland's legal framework refers to legislation, its supporting industry and national guidance, and its regulation including regulators and authoritative agencies.

The gap analysis considers all phases of an offshore project's lifecycle including offshore design, site investigation, construction, operation, and decommissioning activities. The gap analysis focuses on the offshore aspects of ORE projects only.

1.4 Limitations

The following limitations of the gap analysis report and recommendations were identified from the outset:

- The gap analysis focuses on the legal framework in Ireland only.
- The gap analysis focuses on deployment of offshore wind turbines, considering both fixed and floating foundation types. Other marine renewable energy devices (such as wave and tidal) were not considered specifically at this time.

2 Ireland’s Health and Safety ORE Legal Framework

The analysis considers the health and safety legal framework that governs the lifecycle of development of an ORE project – concept, design, construction, operations, and maintenance, decommissioning and demolition. Throughout this lifecycle there is a wide range of mandatory requirements (under current legislation) and good practice guidance that require or guide industry to take described actions. Similarly, the development of ORE projects involves synergies with many different industries (maritime, aviation, construction, electricity supply etc.), and industry functions (health and safety, environment, employment law). Therefore, at the outset of the gap analysis it is important to set out the context within which this work has been undertaken and provide clarity on the terminologies used. The following sections provide a detailed description of the terminologies used throughout the report.

Ireland’s health and safety ORE legal framework comprises documented requirements (e.g., Acts) and the regulation of those documented requirements by national agencies. The structure of these documented requirements is outlined in section 2.1. In addition, the specific regulators and other national authoritative agencies responsible for enforcement is provided in section 2.2.

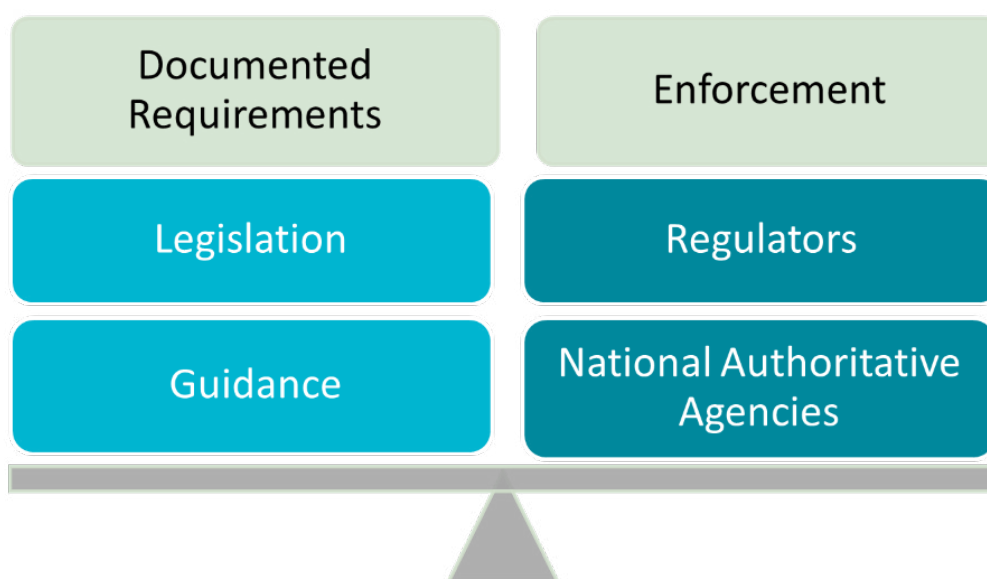


Figure 2-1: Ireland's health and safety ORE legal framework

2.1 Legislation and Guidance

2.1.1 Legislation: Acts and Statutory Instruments

In Ireland, mandatory industry requirements are implemented by Acts of the Oireachtas and Statutory Instruments. Through Acts of the Oireachtas and Statutory Instruments, Ireland implements the binding requirements of voluntary international conventions to which Ireland is a signatory (e.g., ILO C155 1981 and IMO SOLAS Convention). International conventions, though referenced in the gap analysis, are not legally binding until enacted into Irish law by Acts of the Oireachtas and Statutory Instruments and a formal instrument of acceptance, ratification or accession is deposited with the appropriate person in the international organisation. Regardless of their quasi-legal standing, relevant international conventions are considered in the analysis of Ireland's health and safety ORE legal framework. Compliance with the minimum standards in these international conventions provides international organisations a degree of assurance that their operations are reflected within Ireland's legal requirements. EU Directives which require Acts of the Oireachtas and Statutory Instruments to bring them into effect are considered in the analysis in the same manner as international conventions. It should be noted that, although conventions are included, the primary legal references used in this analysis are Acts of the Oireachtas and Statutory Instruments.

Acts of the Oireachtas and Statutory Instruments that implement Ireland's health and safety legal framework for the lifecycle of an ORE project cover a range of industries including construction, marine and aviation. Similarly, a range of industry functions are also covered including health and safety, environment, and employment law. As a result, a range of industries and industry functions Acts of the Oireachtas and Statutory Instruments are applicable to ORE development and, therefore, included in the gap analysis.

Given the range of Acts of the Oireachtas and Statutory Instruments applicable to the ORE industry, and the varied breath of this statute, the principal applicable legislation includes both goal-setting

and mandatory requirements. As such, Ireland's health and safety ORE legal framework contains prescriptive mandatory requirements which are easily interpreted and may be more relevant to industries where an action is mandatory, for example, the marine sector's requirement to register certain ships in the Mercantile Marine Act 1955 ([No. 29 of 1955](#)). Similarly, Ireland's health and safety ORE legal framework contains goal-setting legal requirements, including the requirement in health and safety legislation that every *'employer shall ensure, so far as is reasonably practicable, the safety, health and welfare at work of his or her employees'*, Safety, Health and Welfare at Work Act 2005 ([No. 10 of 2005](#)).

Goalsetting legislation often requires national, international and industry guidance to support employers making decisions as to whether certain actions are 'reasonably practicable' or not. This guidance can also be used in a court of law, both civil and criminal, to demonstrate compliance with goal setting legal requirements. Thus, national, international and industry guidance have been considered as part of Ireland's health and safety ORE legal framework (see appendices B, C and D). The regulation of Acts of the Oireachtas and Statutory Instruments has also been considered as part of the legal framework. Regulatory mechanisms relevant to Ireland's ORE industry, applicable to the range of industry and industry function Acts of the Oireachtas and Statutory Instruments are covered with in section 2.2.

2.1.2 Guidance

The review of Ireland's health and safety ORE legal framework followed an order of precedence where Acts of the Oireachtas and Statutory Instruments are considered as the most binding sources, since they are legal instruments. All other sources of information in relation to legal requirements and regulation of legal requirements are considered as guidance. Given the amount of guidance available to the ORE industry, the gap analysis review recommends that an order of precedence should be applied to legislation and guidance. An illustration of relevant legislation and guidance and its precedence is illustrated in Figure 2-2.

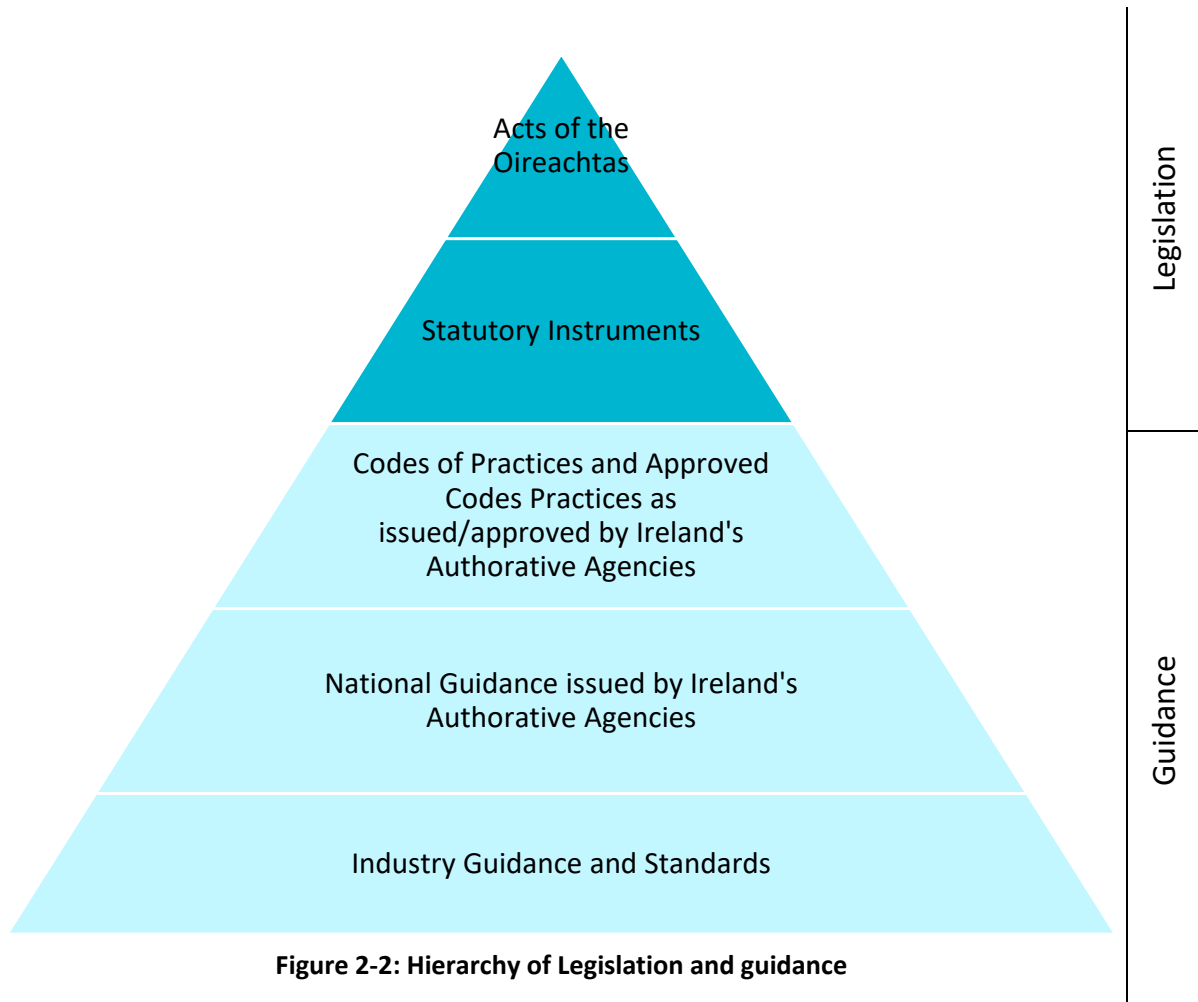


Figure 2-2: Hierarchy of Legislation and guidance

Codes of practice, to the extent that they are referenced in Acts of the Oireachtas and Statutory Instruments, are considered the next most persuasive or binding source as they have a quasi-legal nature given their reference in legislation. For example, the publication of codes of practice is used for the provision of health and safety guidance to duty holders as identified in the Safety, Health and Welfare at Work Act 2005 ([No. 10 of 2005](#)). The Safety, Health and Welfare at Work Act 2005 also allows for the approval of existing codes of practice from other sources to be given status as approved codes of practice and, hence, elevating their status.

In addition to Acts of the Oireachtas and Statutory Instruments, codes of practice and approved codes of practice, national guidance, industry guidance and international standards have been

considered. National guidance, to the extent that it is published by an authoritative agency, is considered more persuasive than industry and international guidance, as it is generally published to describe a means of demonstrating compliance with a goal setting legal requirement and can be seen as a means of compliance with that requirement. Conversely, failure to comply with guidance published by an authoritative agency may be viewed as non-compliance. For example, the [Guidelines on the Procurement, Design and Management Requirements of the Safety Health and Welfare at Work \(Construction\) Regulations 2013](#) (HSA, 2015) published by the Health and Safety Authority states that: *‘Following the guidance is not compulsory and you are free to take other actions to achieve compliance. But if you do follow the guidance, you will normally be doing enough to comply with the law. Health and Safety Authority inspectors seek to secure compliance with the law and may refer to this guidance as illustrating good practice and compliance.’*

Finally, industry guidelines and international standards make up the final group of guidance that can be used to demonstrate compliance with Acts of the Oireachtas and Statutory Instruments. Industry guidelines and international standards pertinent to ORE are numerous and well developed. The adaptation of such guidelines is voluntary; it can be used to demonstrate compliance with legal requirements but also falls into a self-regulatory regime which can give organisations competitive advantage. Examples of industry guidelines and international standards applicable to ORE include IMCA and ISO. For further information on additional international guidance see appendix C and for exclusions on the Benchmark document see appendix D.

2.1.3 ORE assets, safe design, and commissioning

The analysis has referred to Irish legislation that places responsibilities on employers to ensure that machinery is designed, provided and maintained to be safe and without risk to health (Section 8 of the 2005 Safety, Health and Welfare at Work Act ([No. 10 of 2005](#))). Furthermore, that the use of any machinery should be covered by a risk assessment in accordance with section 19 of this Act.

More specific technical requirements are contained in Chapter 2 of the 2007 Safety, Health and Welfare at Work (General Application) Regulations ([S.I. No. 299/2007](#)) which addresses the use of work equipment. These Regulations transpose the “Use of Work Equipment” Directive into national law and includes, *inter alia*, requirements for the statutory examination of lifting equipment. In respect of statutory examination of lifting equipment, the regulations apply not only to employers but also to those who hire out lifting equipment. These regulations set down the minimum requirements for machinery in use including the requirement to ensure that equipment complies with the provisions of any relevant enactment implementing any relevant Directive of the European Communities. Other parts of the “General Application” Regulations are also relevant to machinery safety such as those parts dealing with electricity, noise, and vibration.

Each wind turbine, which incorporates the tower, blades, gearbox and everything else in the tower and nacelle, are considered to be machines under the European Machinery Directive [[2006/42/EC](#)]. The duties on designers and manufacturers of machinery are set in this legislation which has been transposed into national law by the 2008 European Communities (Machinery) Regulations ([S.I. No. 407/2008](#)). These Regulations apply to completed and partly completed machinery, interchangeable equipment, machine related safety components, lifting accessories, chains, ropes and webbing, and removable mechanical transmission devices such as PTO shafts. This Directive also applies to the import of non-compliant machinery (including second-hand equipment) into the European Union, making the importer responsible for bringing the machinery into conformity.

The European Commission has produced a detailed guide to the Machinery Directive: Guide to application of the Machinery Directive [[2006/42/EC](#)], Edition 2.2, October 2019 (European Commission, 2019).

There is a requirement that all wind turbines are CE marked which is in effect a mark of assurance that the wind-turbine complies with the essential health and safety requirements (EHSRs) of EU supply law. In all cases, the manufacturer or the manufacturer's authorised representative must compile information in a technical file confirming how the machine complies with these requirements.

The Machinery Directive [[2006/42/EC](#)] requires that a list of bodies notified under the directive is maintained by the EC. Member States must notify the Commission and the other Member States of the bodies which have been appointed to carry out the assessment of conformity for placing machinery on the market. This list is published in the public domain by the EC. The current (02/03/2023) list of EC bodies does not appear to include any bodies within EU Member States that have responsibility for wind turbines or their components (European Commission, 2023).

The National Consumer Agency (now replaced by the Competition and Consumer Protection Commission) is identified as the competent authority for any product or partly completed machinery in the European Communities (Machinery) Regulations 2008 ([S.I. No. 407/2008](#)).

2.2 Regulators and National Authoritative Agencies

2.2.1 Regulators

Ireland's health and safety legal framework is varied and has not been specifically developed for the ORE industry, nor has it been developed for any particular industry notwithstanding additional industry specific regulations such as construction, fishing or mining. With this in mind, a gap analysis of Ireland's existing health and safety ORE legal framework would not be complete without considering the regulators that control and provide specialist advice on various sectors relating to the ORE industry.

The primary purpose of regulatory control is to ensure quality control of a system, process or product. Regulators are responsible for the enforcement and regulation of Ireland's primary (Acts) and secondary legislation (S.I.) and, therefore, are an important part of Ireland's health and safety legal framework. Regulators can carry out investigations and may take punitive action if, and when, they see fit.

2.2.2 National Authoritative Agencies

The benchmark document produced by RUK highlights the role of other authorities, including investigative authorities that also play a considerable part in the implementation of the health and safety legal framework, through functions such as the provision of information and allocation of infrastructure resources. These authoritative bodies are important focal points for ORE developers, contractors, suppliers and operators, when complying with health and safety requirements.

Safety investigation bodies investigate accidents or incidents with a view to finding causes and establish actions to prevent reoccurrence. This kind of investigation cannot result in punitive action and, as such, facilitates transparency. In this way, safety investigation bodies complete a different function to regulators who also investigate incidents.

State agencies have been considered as public sector bodies of the state that have a statutory obligation to perform specific tasks on behalf of the Government of Ireland (e.g., Commissioners of Irish Lights). State agencies have been identified as important focal points for ORE stakeholders.

Finally, utility providers have been identified as bodies providing public utility services and may have important communications functions and functions in relation to the allocation of resources (e.g., ESB and EirGrid).

Other agencies that provide health and safety support rather than regulation are, for instance, the Irish Fire and Rescue Services. The Irish Fire and Rescue Services are considered an authoritative agency that consult with duty holders and supports them in the effective discharge of their duties under Acts of the Oireachtas and Statutory Instruments. Investigation agencies such as MCIB would fall under the scope of authoritative agencies. The current Irish regulators and national authoritative agencies related to health and safety regarding ORE are illustrated in Figure 2-3, and include investigation bodies, state agencies, utility providers and pending new divisions identified through the gap analysis and consultation process.

It is recommended that guidance be provided to the ORE industry that identifies the key health and safety regulators and authoritative agencies, their roles within the industry, the means of engagement and when they should be engaged.

Note (1) – Guidance is recommended to be provided for the ORE industry that identifies Ireland’s health and safety regulators and key authoritative agencies, their roles within the industry, the means of engagement and when they should be engaged.

Figure 2-3: Irish Health and Safety Regulators and Authoritative Agencies – Overview for ORE

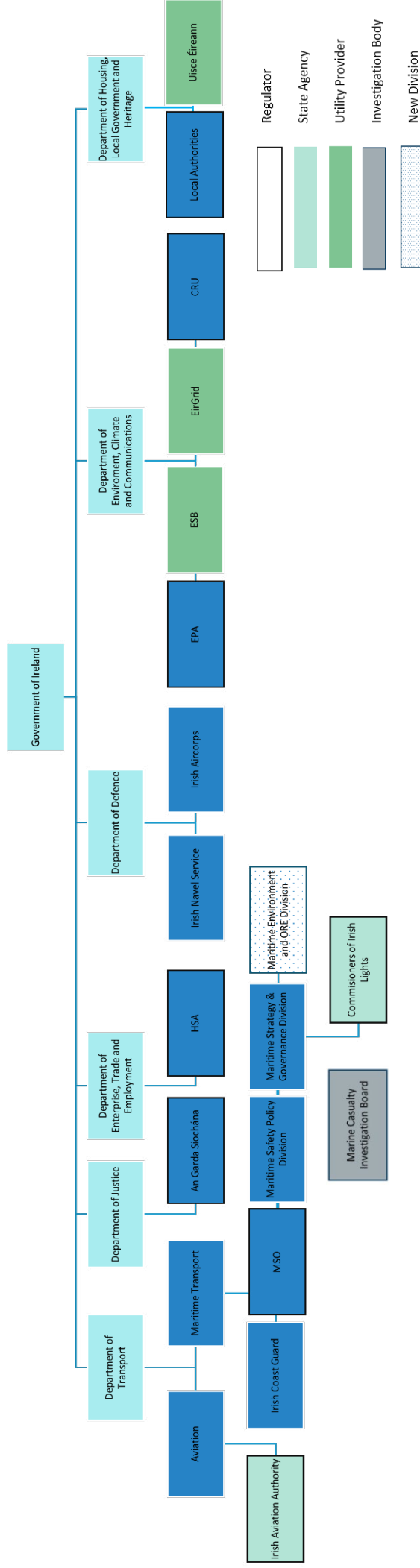


Table 2-1: Health and Safety Regulators and Authoritative Agencies Description

Definition	Description
Regulator	A body that enforces legislation and carries out judicial investigations and enforcements (e.g., MSO)
State Agency	State agencies are public sector bodies of the state that have a statutory obligation to perform specific tasks on behalf of the Government of Ireland (e.g., Commissioners of Irish Lights)
Utility Provider	A body that provides public utility services and may have important communications with ORE developers (e.g., ESB)
Investigation Body	A body that carries out safety investigations which is non judicial (e.g., MCIB)
New Division	New division being created under the Government of Ireland

3 Methodology

A benchmark document was chosen to carry out the gap analysis, namely the Renewables UK (RUK) “Offshore Wind and Marine Energy Health and Safety Guidelines 2014: Issue 2”. Section 3.1 provides further information on the benchmark document. The gap analysis methodology comprises two steps. The first step focuses on legislation and guidance as defined in section 2.1, and how the references in the RUK benchmark document map onto Ireland’s health and safety legal framework. The second step focuses on the regulation of the legislation and guidance as outlined in section 2.2, and the regulators and authoritative agencies relevant to the ORE industry. Consultation workshops were facilitated at various stages of the analysis that included industry stakeholders and representatives of regulators and authoritative agencies. Feedback from the workshops has been incorporated into the final recommendations.

3.1 Benchmark Document

The benchmark document selected for use in this gap analysis was the Renewables UK “Offshore Wind and Marine Energy Health and Safety Guidelines 2014: Issue 2”.

The RUK Document is structured and divided into four main sections:

- Part A- Health and Safety Offshore
- Part B- The Offshore Project Lifecycle
- Part C- Offshore Hazards and Activities
- Part D- References and Glossary

The RUK document was selected as an appropriate benchmark document for several reasons. As this document was published in 2014 (before the UK left the EU) it was assumed that policy changes would not be an issue. In addition, the UK and Ireland have similar legal framework foundations for historical and proximity reasons, similar environmental conditions and constraints, equivalent business language and the existence of some cross border relationships on issues such as

infrastructure and emergency response. Given the proximity of the UK to Ireland and Ireland sharing a border with Northern Ireland, non-conflicting regimes would benefit stakeholders / ERTs and contractors who are likely to be operating in both the UK and Ireland. Certain authoritative agencies share transboundary operations such as the Irish Coast Guard and the Maritime Coastguard Agency, therefore, having such an arrangement for a health and safety ORE legal framework in Ireland would be beneficial.

The RUK document was published in 2014. Since this time there have been developments in the UK legal framework that have not been captured by the RUK benchmark document and, therefore, have not been included in the gap analysis. However, any additional legislation or guidance relevant to the ORE industry since the publishing of the RUK benchmark document or relevant items that were not included in the RUK document have been included in appendices B, C and D of this report, for reference. Further work would be required to map these additional items to the Irish framework.

3.2 Gap analysis approach

A thorough review and systematic approach was undertaken to identify all legislation and guidance referenced in the RUK benchmark document using gap analysis instruments, see appendix A. Each reference was assigned an item number and classified in terms of the type of legislation / guidance, and a summary of the specific requirement. This process was repeated to capture regulators and authoritative agencies and to include the function, responsibility and jurisdiction of each regulator and authoritative agency.

Each item number was then mapped onto Ireland's health and safety legal framework and regulators / authoritative agencies and analysed to determine if a gap exists between the UK requirement and Ireland's equivalent. This was done by reviewing Ireland's current legislation and guidance to find an equivalent or similar requirement in Ireland's existing health and safety ORE legal framework, for each item.

This gap analysis was reviewed during two workshops facilitated by WEI and BWM with key stakeholders. Gap analysis documents were shared with participants in advance. During these workshops a live review of the gap analysis was carried out. Stakeholders were asked to review the analysis to date and, provide feedback. Some stakeholders requested further meetings through WEI which were facilitated. In total eight meetings with stakeholders were held throughout this work. Feedback was incorporated into the final gap analysis report and recommendations therein.

3.3 Terms to identify gaps

Each item identified (legislation and guidance or regulators and authoritative agencies) was mapped to an Irish equivalent and given a summative term to describe how well, or if at all, the item maps. The terms gap, partial gap and no gap were used in the context below:

- **Gap:** If there is no equivalent Irish legislation or guidance, the status ‘gap’ is assigned to this item.
- **Partial Gap:** If there is an equivalent Irish item but this item does not fully meet the requirements of the item identified in the RUK benchmark document, the status ‘partial gap’ is assigned to this item.
- **No Gap:** If there is an equivalent Irish item or more onerous requirement, the status ‘no gap’ is assigned to this item.

In all cases a comment is added to each benchmark item and agency to justify the attribution of “gap”, “partial gap”, or “no gap” status.

4 Results of gap analysis

This section summarises the main results of the gap analysis separated into two key subsections. Firstly, focusing on the legislation and guidance, an identification of where there are gaps and partial gaps in Ireland’s health and safety legal framework. Secondly, a review of the regulators and authoritative agencies responsible for providing health and safety regulation and guidance to the industry. Key notes are highlighted throughout the text; these notes resulted in a number of recommendations presented in section 5.

The full analysis which was undertaken is available in a supplementary spreadsheet to be read in conjunction with this report. This gives further details of the requirements and specific references to legislation and guidance documents studied within this analysis. The gap analysis instruments are included in appendix A.

4.1 Legislation and Guidance

The gap analysis exercise resulted in the identification of a total of 65 references in the RUK document, consisting of various types of legislation and guidance. When mapping the identified references to Ireland’s health and safety legal framework, a total of 61 pieces of comparative/reciprocal Irish legislation and guidance were identified. The difference in the totals is due to two un-matchable gaps identified (i.e., no identified equivalent in Ireland) and two UK pieces of legislation identified as not applicable in Ireland (Commencement Orders for NI or Scotland). Figure 4-1 below shows a summary of the type and quantity of legislation / guidance identified within the RUK document while Figure 4-2 summarises the identified equivalents in Ireland’s health and safety ORE legal framework.

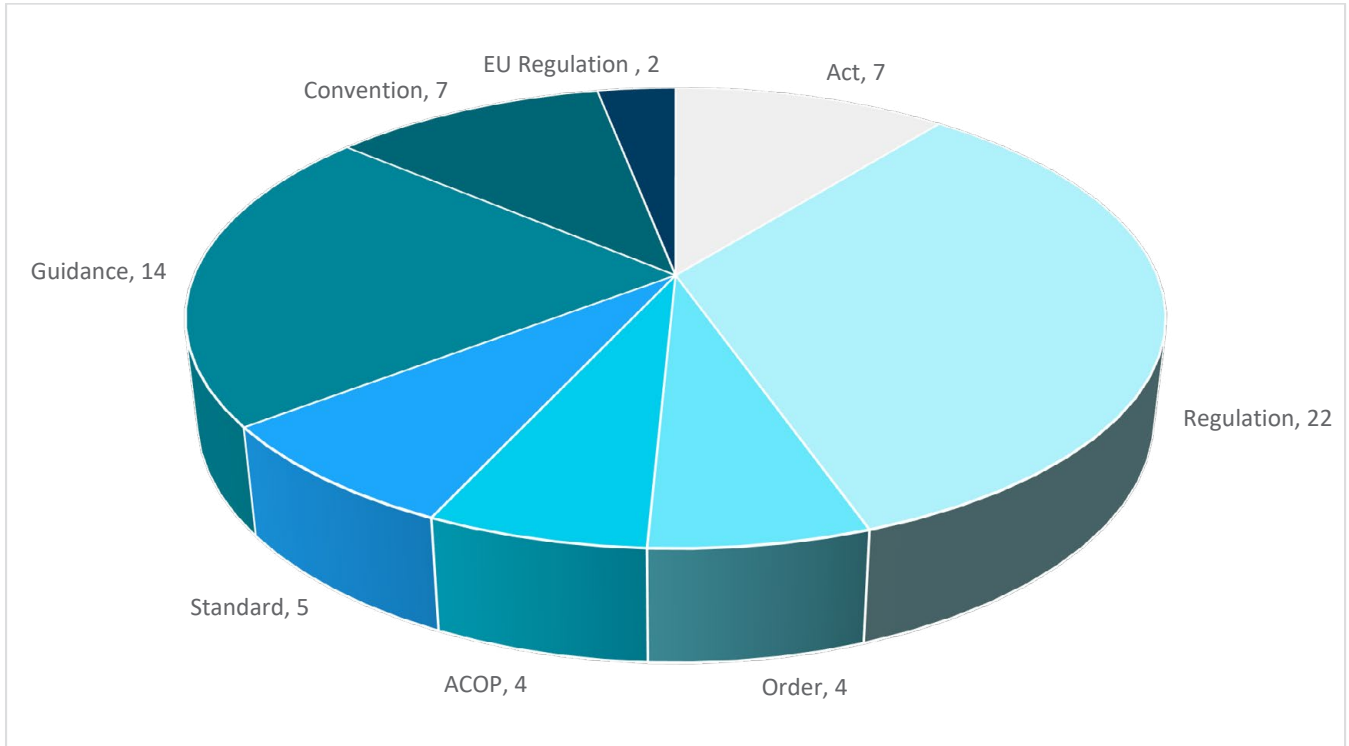


Figure 4-1: UK legislation/guidance type listed in RUK document

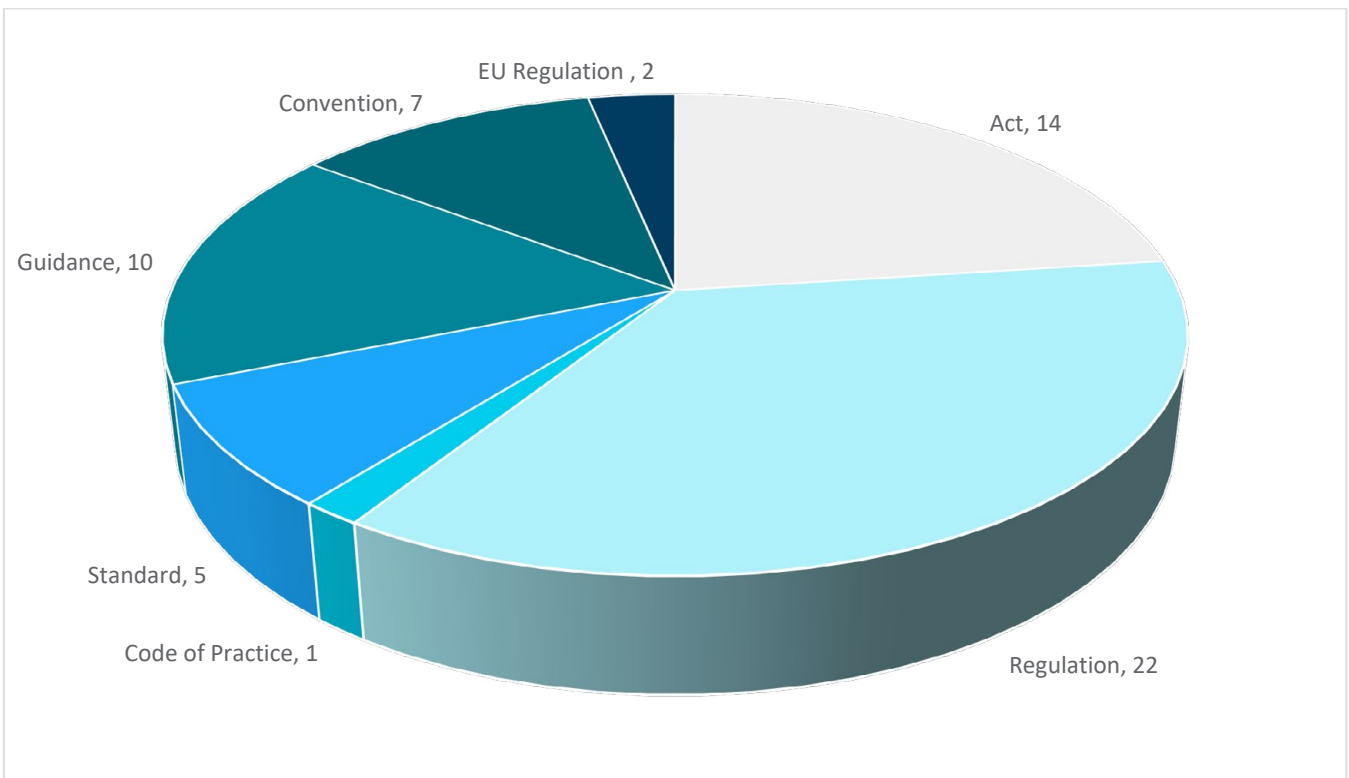


Figure 4-2: Irish legislation/guidance type when mapped from RUK document

Although several references to Acts have been illustrated above, it should be noted that most references in the benchmark document are subsections within one act (2005 Safety, Health and Welfare at Work Act (S.I. No. 10/2005)) as opposed to referring to different acts.

Eight types of legislation and guidance have been referenced throughout the benchmark document. Similarly, when mapped onto Ireland's health and safety legal framework, seven types had been identified. Although the RUK benchmark document has referenced Orders within the legislation, only the primary legal documents such as acts or regulations have been included when mapped onto Ireland's legal framework. The only difference between legal frameworks is that the UK has "Approved Codes of Practices" (ACOPs) and Ireland has "Codes of Practices". This difference is considered to be of minor significance as they both provide similar functions.

Note (2) – Ireland's health and safety legal framework is similar to the UK's framework. A comparison of Figure 4-1 and Figure 4-2 illustrates that both Ireland and the UK have similar legislation and guidance, applicable to the ORE industry. This was assumed from the outset, when choosing the RUK Document as a benchmark. Both jurisdictions use acts, regulations, approved codes of practices / codes of practices and national guidance to layout their requirements. This note is for record purposes. No further recommendations associated with this note.

When comparing the requirements within the referenced legislation / guidance, it was found that 55 items from the benchmark standard mapped directly across to the Irish legal framework, resulting in no gap being found. This equates to a substantial 90% of the requirements within the benchmark document already existing in the Irish legal framework. See Figure 4-3.

Note (3) – The national UK legislation and guidance referenced in the RUK Document are substantially mapped across to national legislation and guidance in Ireland. This note is for record purposes. No further recommendations associated with this note.

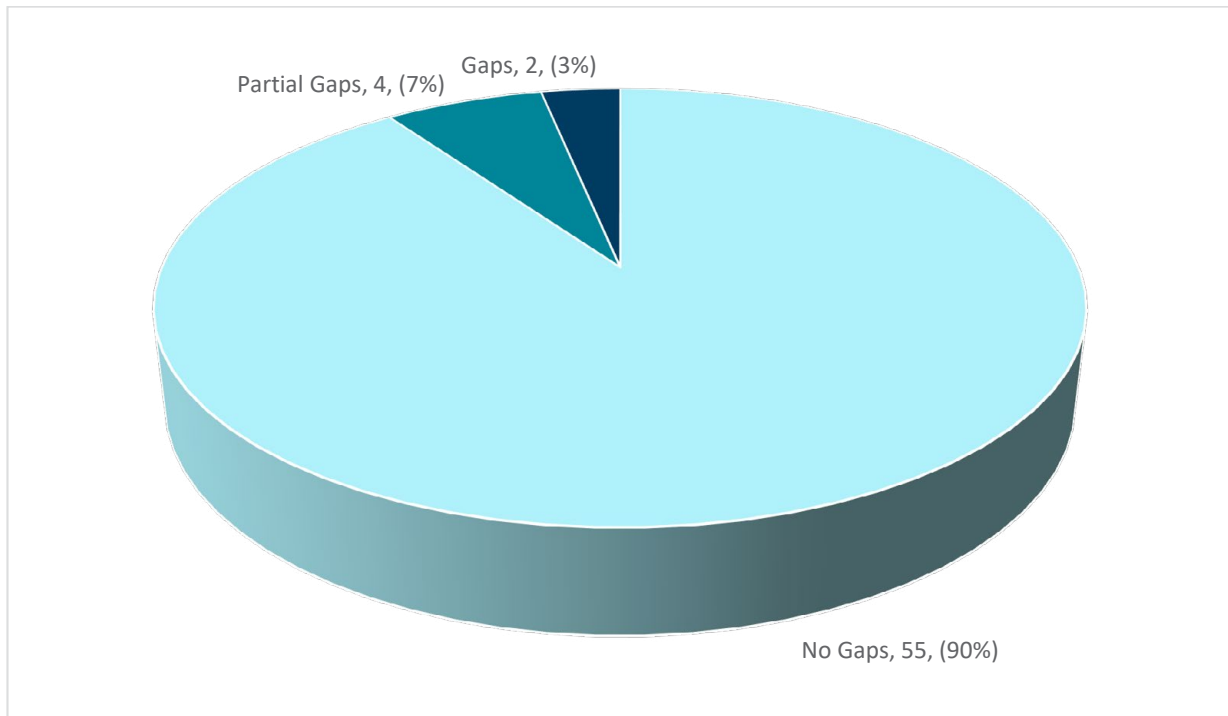


Figure 4-3: Gap Analysis Results - Legislation and Guidance

The majority of the benchmark legislation and guidance (90%) is already incorporated into Ireland’s health and safety legal framework. Although it has not been directly developed for the ORE industry this demonstrates that Ireland has a well-developed health and safety legal framework when compared against the RUK benchmark document.

Note (4) – Ireland has a well-developed health and safety legal framework. Although this framework has not been developed specifically for ORE there are many standards and authoritative agencies already in existence which are directly relevant for ORE. This note is for record purposes. No further recommendations associated with this note.

Both Ireland and the UK use international standards to support their national legislation and guidance. The international standards referenced in the benchmark document common to both Ireland and the UK are conventions, international standards, and EU Regulations. Each international standard referenced in the benchmark document has been directly mapped across to the same Irish

equivalent as these pieces of legislation or guidance have been adopted into Ireland's health and safety legal framework. It should be noted that, although international legislation or guidance cannot be enacted into Irish law without Acts of the Oireachtas or S.I., the mapped Irish equivalent in the gap analysis has been referenced to the relevant international standard. This was to provide clarity to the reader, as international pieces of legislation or guidance may have numerous acts or regulations enacting them into Irish law.

Note (5) – All international standards referenced in the RUK Benchmark Document are implemented in Ireland and are applicable to Ireland's health and safety ORE legal framework; they should be included in an equivalent Irish guidance document.

The gap analysis resulted in a total of four partial gaps identified. The sectors in which these gaps exist include marine and electrical health and safety. Two gaps in Irish legislation / guidance were identified relative to the aviation sector. Partial gaps and gaps are further detailed by sector in sections 4.1.1, 4.1.2 and 4.1.3 below.

4.1.1 Aviation

Two gaps have been identified in the sector of aviation. The Civil Aviation Authority in the UK have produced guidance on the design requirements for offshore helicopter landing areas [CAA CAP 437](#) (Chapter 9 and Chapter 10) (Civil Aviation Authority, 2023). Irish equivalents have not been developed, hence this is considered a gap. The referenced CAP documents provide guidance on helicopter landing areas on vessels (Chapter 9) and helicopter winching areas on vessels and wind turbines (Chapter 10).

Examples of guidance are listed below for illustration purposes:

- Landing areas on vessels: Helicopter landing areas to provide a full 210° obstacle-free sector surface for landing and take-off. To provide protection from obstructions adjacent to the landing area, an obstacle protection surface should extend both forward and aft of the landing area. This surface should extend at a gradient of 1:5.
- Winching areas on vessels: Where practicable, the helicopter should always land rather than hoist, because safety is enhanced when the time spent hovering is reduced. A winching area should be located over an area to which the helicopter can safely hover whilst hoisting to or from the vessel. Its location should allow the pilot an unimpeded view of the whole of the clear zone whilst facilitating an unobstructed view of the vessel. The winching area should be located so as to minimise aerodynamic and wave motion effects. A winching area should provide a manoeuvring zone with a minimum diameter of 2D (twice the overall dimension of the largest helicopter permitted to use the area).
- Winching areas on wind turbines: Within a horizontal distance of 1.5m measured from the winching (clear) area, no obstacles are permitted to extend above the top of the railing. Beyond 1.5 m, and out to a distance corresponding to the plane of rotation of the turbine rotor blades, obstacles are permitted up to a height not exceeding 3 m above the surface of the winching area. It is required that only fixed obstacles essential to the safety of the operation are present, e.g., anemometer masts, communications antennae, heli-hoist status light etc.

Offshore landing and winching areas may be needed for ORE projects for transportation and access for operations and maintenance so design specifications and regulatory control of these areas may be required if helicopters are being used. At present, Ireland has no equivalent guidance and, as such, this has been noted as a gap in Ireland's health and safety ORE legal framework. However, such guidance documents are available in other jurisdictions (including the CAA CAP guidance documents).

Note (6) – Gap (item no. 39, 40): Due to Ireland having no equivalent guidance document on helicopter landing and winching areas like CAA CAP 437 in the UK, this has been noted as a gap in Irelands legal framework.

Note (7) – Gap (item no. 39, 40): The RUK Benchmark Document referenced discrete elements of the CAA’s CAP guidance documents as a source for the design of helicopter landing and winching areas. This note illustrates a shortcoming in the RUK Benchmark Document, which focuses on limited elements of the CAA CAPs; it may be more beneficial for a guidance document to signpost relevant national sources and provide an overview on the source rather than focus on a finite number of detailed requirements.

4.1.2 Marine/Maritime

The first partial gap identified was in relation to the Merchant Shipping Act 1894 to 2022 ([No. 8 of 2022](#)) and the Maritime Safety Act 2005 ([No. 11 of 2005](#)) regarding the regulation for offshore service vessels. The Merchant Shipping Act applies to Irish ships and to any other ship while in any port in the State, unless it would not have been in such port but for stress of weather or any other circumstances that neither the master nor the owner of the ship could have prevented or foreseen. On review of these acts and consultation with stakeholders it is clear that at present they do not cover all range of vessels needed for development of ORE projects in Ireland.

In addition to the above mentioned Acts, a [General Scheme of the Merchant Shipping \(Investigation of Marine Accidents\) Bill 2022](#) was published by the Department of Transport in December 2022 which deals with legislative changes applying to offshore service vessels and industrial personnel and additional primary national legislation is currently under development to facilitate the operation of offshore service vessels.

Wind Energy Ireland sought clarification on a number of queries around industrial personnel, passenger boats and the operation of offshore services vessels in Ireland which were built under the SPS code in the UK. It has been advised that any vessel wishing to operate as an offshore service vessel under the Irish flag will be required to comply with the survey and certification requirements set out in national primary legislation (once passed) and any associated rules made thereunder. Furthermore, foreign flagged vessel wishing to operate in Irish waters on an on-going basis under the SPS Code are advised to contact the Marine Survey Office directly to determine if such an operation can be facilitated under Ireland's legislative code, having regard to the MSO's obligations under international, EU and national legislation.

While legislation is currently under development to facilitate the operation of offshore service vessels and the carriage of industrial personnel this has not yet been enacted and so has been identified as a partial gap. It is envisaged that stakeholder consultation on draft regulations will be undertaken before finalisation and therefore it is recommended that all stakeholders and Wind Energy Ireland continue to engage with the Department of Transport to ensure new legislation is clear and fit for purpose.

Note (8) – Partial Gap (item no. 11): Existing Legislation does not cover the full range of vessels required for the development of ORE projects in Ireland however additional legislation is currently under development to facilitate this.

In relation to maritime security, the benchmark document references the Maritime Security Act 1997. A partial gap exists between it and its Irish equivalent of Maritime Security Act 2004 ([No. 29 of 2004](#)) and European Communities (Port Security) Regulations 2007 ([S.I. No. 284/2007](#)), in that neither the Irish act nor EU regulations cover piracy. Although a partial gap exists, it is unlikely to be seen as a major concern for the Irish ORE industry.

A partial gap (item no. 12) was identified as piracy is not referenced in Irish legislation. Piracy is mentioned specifically in the RUK Document with reference to the Merchant Shipping Act 1997 where the definition includes “*any illegal acts of violence or detention, or any act of depredation, committed for private ends by the crew or the passengers of a private ship or a private aircraft*”. Piracy is not specifically mentioned and defined in the mapped Irish legislation (Maritime Security Act 2004 (No. 29 of 2004) and European Communities (Port Security) Regulations 2007 (S.I. No. 284/2007)) and has, therefore, been identified as a partial gap for consistency with the gap analysis approach described in the methodology (see section 3.2).

A closer review of the mapped Irish legislation (Maritime Security Act 2004 (No. 29 of 2004)) indicates that, in practice, there is no gap in relation to activities that could be classified as “piracy”. The Maritime Security Act, 2004 includes a description of the following as “Offences”: “A person who unlawfully and intentionally does any of the following acts is guilty of an offence: (a) seizing or exercising control over a ship or fixed platform by force or threat of force or any other form of intimidation; (b) performing an act of violence against a person on board a ship or fixed platform if that act is likely to endanger the safe navigation of the ship or the safety of the fixed platform”. Although the mapped Irish legislation does not include a specific reference to “piracy”, it could be argued that the “offences” the Maritime Security Act, 2004 describe constitute the act of piracy as defined in the RUK benchmark document.

For consistency this item has been listed as a ‘partial gap’ and noted as such (Note No. 8). However, the analysis suggests that no further action is required, as in practice there is no gap in relation to piracy and hence no recommendations are linked to this item.

Note (9) – Partial Gap (item no. 12): ‘Piracy’ is defined and referenced in the RUK Document. This term is not defined in the mapped Irish legislation; however, actions that might constitute piracy are listed as ‘offences’ in the mapped Irish legislation. This note is for record purposes. No further recommendations associated with this note.

The RUK Benchmark Document refers to the regulation of ports and harbours in the Harbours Act, 1964. The gap analysis tool maps the requirements of this statute (Harbours Act, 1994) to the Irish Harbours Act 1996 ([No. 11 of 1996](#)). However, there is a difference between the purpose of the UK Harbours Act, 1964 and Irish Harbours Act, 1996. The UK Act includes the objective to “establish a National Ports Council; to provide for the control of harbour development and for giving financial assistance for the improvement of harbours; to make other provision respecting the construction, improvement, maintenance and management of harbours”. There is no such requirement in the Irish Harbours Act, 1996 for the provision of a National Ports Council.

The RUK Benchmark Document mentions the Harbours Act, 1964 as regulating ports and harbours only. The Irish equivalent (Harbours Act, 1996) does likewise therefore, a desktop study strictly following the gap analysis approach described in section 3.2 would result in identification of no gap. However, the Harbours Act, 1964 was repealed in 1981 by [Transport Act 1981 \(c. 56, SIF 58\)](#), Sch. 12 Pt. II. As this analysis involved stakeholder engagement, a discrepancy in relation to the lack of an objective to establish a National Ports Council was noted during those consultations; therefore, this item has been denoted as a “partial gap”. Although this is not a specific health and safety issue, which is the intended scope of the RUK Benchmark Document, this item is nonetheless denoted as a partial gap. It is assigned as a “partial gap” as opposed to a “gap” since national policy in relation to ports and harbours has been clarified in various publications including the [Policy Statement on the facilitation of Offshore Renewable Energy by Commercial Ports in Ireland](#) (Department of Transport, 2021). Given the critical importance of ports and harbour infrastructure to the successful development of the ORE industry and potential health and safety implications if this infrastructure is not provided and/or maintained, a partial gap appears appropriate. However, it is recognised that national policy is being developed to close this partial gap.

Note (10) – Partial Gap (item no. 63): The Harbours Act, 1964 listed in the RUK Benchmark Document is mapped onto Ireland’s Harbours Act, 1996. Strictly following the definitions set out in a partial gap

is assigned as Ireland's Harbours Act, 1994 does not establish a National Ports Council as its UK equivalent does. However, the Harbours Act 1964 has since been repealed and this note is for record purposes only. No further recommendations associated with this note.

4.1.3 Electrical Health and Safety

The RUK Benchmark Document refers to the Electricity Safety, Quality and Continuity Regulations 2002, in relation to underground cables and substations. The gap analysis tool maps the requirements of this statute (Electricity Safety, Quality and Continuity Regulations, 2002) to the Safety, Health and Welfare at Work (General Application) Regulations 2007 to 2021 - Part 3: Electricity (S.I. No. 299/2007), in Ireland.

There is a difference in the legislative approach in both pieces of statute. Ireland and the UK have largely goal setting health and safety legislation; however, some prescriptive legislation is present in both health and safety legal frameworks. The Electricity Safety, Quality and Continuity Regulations 2002 in the UK take a prescriptive approach to substations, including requirements for “every generator and distributor” to “enclose any part of the substation, which is open to the air and contains live equipment, which is not encased, with a fence or wall not less than 2.4 metres in height”. The Irish Safety, Health and Welfare at Work (General Application) Regulations 2007 to 2021 - Part 3: Electricity (S.I. No. 299/2007) does not mandate such a prescriptive approach to substations. Part 91 (Substation and main switch room safety) requires that employers have “arranged, so far as is reasonably practicable, so that no person can obtain access thereto otherwise than by the intended entrance.” Nonetheless, the requirement for a fence 2.4m high is included further in the Safety, Health and Welfare at Work (General Application) Regulations 2007.

A partial gap involving electrical health and safety has been identified in relation to the benchmark legislation referring to substations whereas Ireland's equivalent has different substation requirements (item 43).

The referenced UK statute also has more prescriptive requirements for signage around substations compared to the goal-setting requirements in the Irish legislation. The referenced UK statute includes requirements *“to ensure that, so far as is reasonably practicable, there are at all times displayed (i) sufficient safety signs which comply with Schedule 1 and which are of such size and placed in such positions as are necessary to give due warning of such danger as is reasonably foreseeable in the circumstances; (ii) a notice which is placed in a conspicuous position and which gives the location or identification of the substation, the name of each generator or distributor who owns or operates the substation equipment making up the substation and the telephone number where a suitably qualified person appointed for this purpose by the generator or distributor will be in constant attendance; and (iii) such other signs, which are of such size and placed in such positions, as are necessary to give due warning of danger having regard to the siting of, the nature of, and the measures taken to ensure the physical security of, the substation equipment”*.

For consistency, this item has been listed as a ‘partial gap’ and noted as such (See Note 11) to identify different approaches to legislation in both jurisdictions. Advantages of prescriptive and goal-setting legislation is outside the scope of this analysis. The differences between the approach to mandated requirements is acknowledged as a ‘partial gap’ for record purposes and to inform further works on this topic.

Note (11) – Partial Gap (item no. 43): The Electricity Safety, Quality and Continuity Regulations, 2002 listed in the RUK Benchmark Document is mapped onto the Ireland’s Safety, Health and Welfare at Work (General Application) Regulations 2007 and ESB Electrical Health and Safety Rules. A partial gap is assigned the types of legislation is not directly comparable and as Ireland’s approach is more goal setting than the UK document which is more prescriptive.

4.1.4 Construction Regulations

The benchmark document references the Construction (Design and Management) CDM Regulations and 2007 states that CDM applies both on and offshore within the whole UK Territorial Sea, In Ireland, a subgroup within Wind Energy Ireland (WEI) Health and Safety Working Group has been liaising with the application of the equivalent regulation in Ireland, The Safety, Health and Welfare at Work (Construction) Regulations 2013 (S.I. No. 291/2013) to an offshore wind farm. It is now understood that intrusive work as described would be classified as “exploration or investigation” and so would come within the 2013 Construction Regulations, while non-intrusive work could be classified as a “site survey” and as such would fall outside the Regulations.

These regulations set out the roles and duties of duty holders during the lifecycle of a construction project which are similar in both jurisdictions with some minor nuances. The updated [Managing Health and Safety in Construction: Construction \(Design and Management\) Regulations 2015](#) in the UK states: There may be occasions where two or more projects are taking place on the same site at the same time, but are run independently of one another. Whatever the circumstances, it is essential that there is clarity over who is in control during the construction phase in any part of the site at any given time. Where it is not possible for one principal contractor to be in overall control, those principal contractors involved must: (a) cooperate with one another; (b) coordinate their work; and (c) take account of any shared interfaces between the activities of each project (e.g., shared traffic routes). There is no reference to two or more principal contractors in the Construction (Design and Management) Regulations 2015 ([2015 No. 51](#)), it is in the supporting guidance only.

While the Irish equivalent Safety, Health and Welfare at Work (Construction) Regulations 2013 ([S.I. No. 291/2013](#)) does not allow for ‘two or more projects’ to take ‘place on the same site at the same time’ it does allow for two or more projects to occur at the same time where sites are defined (separated) i.e., two or more PSCS’s working on the same development but ‘different projects’, this

could apply to an onshore /offshore situation easily and many others where ‘separation’ can be identified.

The guidance allows for two or more principal contractors only in situations ‘where it is not possible for one principal contractor to be in overall control’. Given this and other requirements, the authors believe that the interpretation and implementation of the requirements of both sets of regulations (UK and Ireland) as applicable to ORE are materially equivalent and therefore no gap has been identified. However, it is accepted that a variation exists.

4.2 Regulators and National Authoritative Agencies

The benchmark document mentions UK regulators relating to health and safety in the ORE industry and is again used as a basis for identifying Ireland’s key health and safety regulators and authoritative agencies given the UK and Ireland’s similar legal framework foundations. The term authoritative agency is used to cover enforcement bodies, bodies that provide advice and hybrid bodies that fulfil both functions (see section 2.2).

Through the gap analysis of the RUK benchmark document, eight authoritative agencies were identified as operational in the UK system. The function/responsibility and jurisdiction of each agency was investigated and mapped to an Irish equivalent. A considerable amount of similarity was identified in both jurisdictions with some variations identified below. Eight Irish health and safety agencies were identified through the gap analysis. When compared to the benchmark document no gaps were found in regulators and authoritative agencies but, upon further research, overlaps and gaps do exist (see section 4.2.1 and 4.2.2). Furthermore, additional Irish health and safety agencies with relevant responsibilities such as the EPA and the CRU were identified, but an equivalent was not mentioned in the RUK document. Through the gap analysis and consultation process 13 key health and safety regulators and authoritative agencies have been identified as being involved in or relevant for the health and safety regulation of ORE projects in Ireland. These regulators and

authoritative agencies have been identified relating to a number of different sectors such as marine, aviation and workplace health and safety.

Note (12) – Benchmark document only refers to regulators and not all authoritative agencies in the UK relevant to ORE industry. This note illustrates a shortcoming in the Benchmark Document.

Note (13) – There are thirteen Irish health and safety regulators and authoritative agencies relevant to the ORE industry.

Table 4-1 summarises the Irish health and safety regulators and authoritative agencies identified through this gap analysis as relevant to the ORE industry in Ireland and current understanding of their function and responsibility and, their jurisdiction. See the supplementary spreadsheet for the complete gap analysis on regulators and national authoritative agencies.

Table 4-1: Irish health and safety Regulators and Authoritative Agencies

Agency	Function/Responsibility	Jurisdiction
Health and Safety Authority	Monitor compliance with legislation at the workplace and can take enforcement action.	Health and Safety in Ireland
Irish Coast Guard	The Irish Coast Guard has responsibility for Ireland's system of marine communications, surveillance and emergency management, along with pollution response	Ireland's Exclusive Economic Zone (EEZ) and certain inland waterways.
Marine Survey Office	MSO is responsible for the enforcement of national legislation in relation to, security, environmental protection and living & working conditions for vessels and ports in Ireland and Irish ships abroad.	Irish registered vessels worldwide and foreign flagged vessels in Irish territorial waters and inland waterways. Irish Ports
Marine Casualty Investigation Board	To examine and if necessary, carry out investigations into all types of marine casualties with a view to making recommendations for the avoidance of similar marine casualties in the future.	Irish registered vessels worldwide and other vessels in Irish territorial waters and inland waterways.
An Garda Síochána	Involved in investigations relating to murders and serious crime, missing persons and evidence recovery.	Policing duties in Ireland

The Commissioners of Irish Lights	Responsible for superintendence and management of all lighthouses and other aids to navigation.	Republic of Ireland and Northern Ireland waters
Irish Aviation Authority	The Irish Aviation Authority promotes and regulates the safety of aviation in Ireland. Responsible for the development and implementation effective strategies, regulatory frameworks and processes.	Aviation in Ireland
Irish Air Corps	The role of the Air Corps under the Defence Act is to contribute to the security of the State by providing for the Military Air Defence of its airspace.	Irish airspace
The Commission for Regulation of Utilities	The Commission for Regulation of Utilities (CRU) is Ireland’s independent energy and water regulator. CRU is the economic regulator of Irish Water.	Energy and water regulation in Ireland
Environmental Protection Agency	Responsible for environmental regulation and protecting people and the environment from the harmful effects of radiation and pollution. Regulate environmental targets such as noise, water and dust.	Environmental regulation in Ireland
Local Authorities	Various responsibilities at local level including responsible for waste management, environmental monitoring and enforcement measures, harbours/marinas, pollution investigation and control and the protection of surface water.	Areas within their locality
Competition and Consumer Protection Commission	Responsible for promoting compliance with, and enforcing, competition and consumer protection law in Ireland and provide information to consumers about their rights, personal finance and product safety.	Competent authority for any product or partly completed machinery in the European Communities (Machinery Regulations 2008 (S.I. No. 407/2008).
Irish Naval Service	The Naval Service is the State's principal seagoing agency with a general responsibility to meet contingent and actual maritime defence requirements.	Ireland's Exclusive Economic Zone (EEZ)

4.2.1 Interfaces between Regulators and Authoritative Agencies

While mapping the regulators and authoritative agencies mentioned in the benchmark document onto Ireland’s health and safety legal framework, it has emerged that there are some interfaces in jurisdictions between regulators and authoritative agencies in Ireland. These interfaces may lead to unclear direction for developers and stakeholders in the ORE industry regarding regulatory control

in relation to certain topic areas. Table 4-2 below summaries interfaces between regulatory control agencies, relevant to Ireland’s ORE industry, where perceived uncertainty due to interfaces may occur.

Table 4-2: Interfaces between Regulators/Authoritative Agencies

Interfaces between Regulators and Authoritative agencies		
Item No.	Agencies	Interface
1	HSA	The HSA is responsible for Health and Safety in the Workplace while MSO is responsible for safety of shipping. As ORE developments can be classified as both clarity is required particularly around interface points. E.g. Vessel to fixed installation/shore transfer. When is construction considered a shore based or a maritime activity.
	MSO	
2	Irish Coast Guard	Transboundary emergency response.
	Maritime and Coastguard Agency (UK)	
3	MSO	Acceptance of foreign flagged vessels certification and classification requirements
	Foreign Vessel Regulators	
4	HSA	Arrangements for evacuation, escape, recovery, and rescue to prevent and reduce harm to persons working at offshore renewable energy sites.
	Irish Coast Guard	
5	Local Authorities	Possible arrangements for offshore fire regulation
	HSA	
	Irish Coast Guard	

Note (14) – 5 key interfaces between regulators and authoritative agencies have been identified.

Similar interfaces exist in other jurisdictions also and this has been successfully resolved through implementation of Memorandum’s of Understanding (MoU). For example, in the UK, since publishing the RUK document, two MoUs have been written between organisations where their duties for health and safety enforcement and accident investigation interface at the water margin, offshore and on inland waterways in and around the UK. The MCA / HSE / MAIB Memorandum of

Understanding (2021) and the MCA / HSE /MAIB Operational Working Arrangements (2021) provide clear scope of authority and legislation between the agencies involved.

There was an interface in the UK regarding offshore emergency response. In order to address it, the HSE and MCA have published a Regulatory expectation for emergency response arrangements in the ORE industry to provide arrangements for evacuation, escape, recovery and rescue to prevent and reduce harm to persons working at offshore renewable energy sites.

Note (15) – MoU’s have previously been used to resolve overlaps of regulatory control and to ensure clear understanding between regulators for the ORE industry in other countries.

4.2.2 Gaps in Regulators and Authoritative Agencies in Ireland

Direct comparison between the regulators and authoritative agencies mentioned in the benchmark document and those existing in Ireland identified no gap. However, on further consideration it was observed that there is a gap regarding the regulation of offshore fire safety owing to the fact that offshore fire regulation was not specifically mentioned in the benchmark document. This has been included due to the reference on fire legislation in the benchmark and how the legal framework is not complete without regulatory control, therefore, it should be included in the analysis of Ireland’s regulators and authoritative agencies.

In Ireland, fire safety onshore currently falls under the local authority’s jurisdiction. The Building Control Acts 1990 to 2014 ([No. 3 of 1990](#)) give the Building Control Authorities powers of inspection and enforcement under the Act to monitor compliance of the Building Regulations. Currently, there is no offshore regime of fire safety inspection or regulation for ORE sites in Ireland (i.e., sites not bound by the Petroleum (Exploration and Extraction) Safety Act 2010 ([No. 4 of 2010](#))).

Note (16) – Gap: One gap has been identified in regulators and national authoritative bodies in Ireland relating to offshore fire safety for ORE projects.

As no UK offshore fire regulation was mentioned in the benchmark document, guidance on how this can be addressed can be taken from considering examples from other jurisdictions.

For example, in Sweden, wind turbines are not treated as buildings, therefore, they do not have to comply with Swedish building regulations. However, they do comply with three pieces of legislation:

1. The Planning and Buildings Act (2010:900) – Section A.B.C load capacity, stability, and Section D.E.F durability and safety in case of fire.
2. The technical provisions of the Building and Planning Ordinance (2011:338) including requirements such as the structure's fire resistance, the development and spread of fire and smoke within the structure, the spread of fire to nearby constructions, considerations been given to the safety of rescue services in case of fire.
3. The Application of European Construction Standards, with a focus on EKS 9 with respect to structural stability in fire and with SS-EN 1991-1-2:2002 (Dederichs, et al., 2016).

4.3 Summary of gap analysis

Sixteen notes have been emphasized throughout this section to highlight the key findings from the analysis. Some notes highlighted above are the result of gaps or partial gaps identified in Ireland’s health and safety ORE legal framework, while others result from comparisons made between the UK and Irish legal framework’s. A comment has been made in each note on whether it results in a recommendation, a shortcoming of the benchmark document, or if no further action is required regarding Ireland’s health and safety ORE legal framework. See Figure 4-4 below.

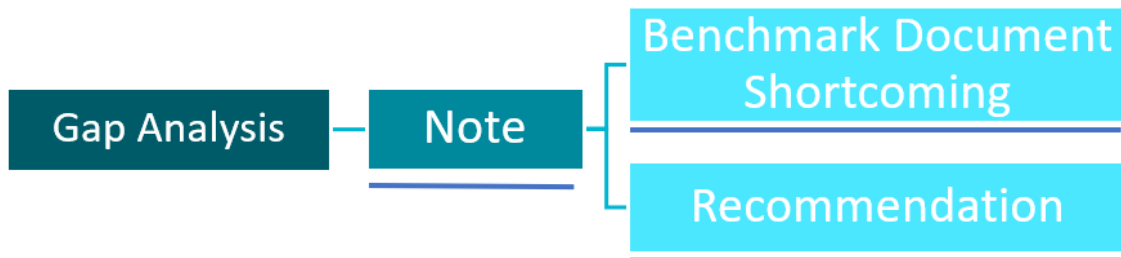


Figure 4-4: Notes from Gap Analysis

Table 4-3 below summarises the notes that have arisen from the gap analysis. Five notes have resulted in no further action required on the specified area. Two notes have resulted in shortcomings in the benchmark document due to omission or due to new legislation or guidance arising since the date of publication in 2014. Nine notes have resulted in recommendations that can be seen below in section 5.2 of this report.

Table 4-3: Summary of Notes from Gap Analysis

No. of Notes	No further action	Benchmark document shortcoming	Recommendation
16	5	2	9

5 Conclusions and Recommendations

5.1 Conclusions

The objective of this work was to carry out a gap analysis to investigate health and safety ORE legal frameworks in similar jurisdictions and analyse the existence of similar requirements and mechanisms within Ireland’s health and safety ORE legal framework, to identify any shortcomings in Ireland’s existing health and safety legal framework and any implications for the ORE industry and its associated stakeholders.

Within the scope of this analysis, no gaps were found in 55 of the benchmark standards in the RUK document. Two gaps were identified relating to aviation in relation to specific offshore landing areas and winching requirements. Four partial gaps were identified in the sectors of marine / maritime and electrical health and safety. Table 5-1 below quantifies the findings of the gap analysis.

Table 5-1: Gap Analysis findings

Results	No Gap	Partial Gap	Gap
Number of items	55 (90%)	4 (7%)	2 (3%)

Following the gap analysis on regulators and authoritative agencies, thirteen Irish regulators and authoritative agencies were identified as involved in or relevant to the ORE industry. In addition, clarification is required for ORE developers on the jurisdiction of certain regulators / authoritative agencies and their specific areas of governance. Some interfaces between multiple authoritative agencies have been identified during the gap analysis (see section 4.2.1). Guidance is required for developers where there may be more than one authoritative agency.

In summary, the gap analysis found that there is substantial legislation and guidance at international, European, and national level already in existence to guide the development of offshore renewable energy projects as referenced in the Gap Analysis spreadsheet and appendices C and D of this report.

5.2 Recommendations

The following recommendations are made to help pave the way for the development of health and safety guidance document for the Irish ORE industry.

5.2.1 Aviation

Recommendation 1: The benchmark document references discrete elements of the CAA's CAP guidance documents as a source for the design of helicopter landing and winching areas, there is no equivalent in Ireland as IAA does not publish such guidance (see note no. 6). Developers may need helicopter landing areas and winching areas design requirements for ORE developments, and it is recommended to produce an Irish equivalent guidance on this area or to adopt international guidance from another jurisdiction such as CAA CAP 437 - Offshore helicopter landing areas or good practice guidance published by G+ (see appendix C). Information on the aviation standards and applicable guidance required for operation in Ireland should be given in a signposting health and safety guidance document for the Irish ORE industry.

5.2.2 Marine/Maritime

Recommendation 2: A partial gap has been identified relating to legislation for offshore service vessels (see note no. 8) and as there is currently new legislation being developed to close this partial gap, any legislation developed should be included in an Irish ORE guidance document. It is recommended that the ORE industry, in general, should aim to increase engagement with MSO and become more involved in ongoing development of legislation for ORE vessels and industry through stakeholder consultation. This could be facilitated through the Supply Chain working group of WEI or other means.

5.2.3 Electrical Health and Safety

Recommendation 3: As a partial gap has been identified in this sector (see note no. 11), it is recommended that ESB Electrical Health and Safety Rules that has since been produced relating to substations be incorporated into an Irish guidance document. This piece of guidance bridges the partial gap associated with the area of electrical health and safety. Although it is still to be noted that the benchmark reference was that of a regulation which has legal precedence compared to Ireland's reciprocal guidance which has no legal status, for this reason a partial gap is still attached to this item.

5.2.4 Guidance Document

Recommendation 4: A suitable health and safety guidance document for the ORE industry is required to guide developers to the appropriate legislation, regulations and the relevant government authorities to be consulted when preparing to commence ORE operations within Ireland's jurisdiction. While the number of gaps and partial gaps identified in this analysis is minimal, it is recommended that a signposting instrument is developed for national and international organisations operating in this sector in Ireland. This would direct developers and their contractors to relevant legislation and guidance and help map and clarify the roles and responsibilities of the relevant regulators or authoritative agencies. This guidance document should provide an overview on the requirements rather than focus on a finite number of detailed requirements.

Recommendation 5: This gap analysis instrument and report is a useful starting point for the development of such document. Irish legislation and guidance and, regulators and authoritative agencies identified through this gap analysis should be referenced in an Irish health and safety ORE guidance document.

Recommendation 6: Additional legislation and guidance that is not present in the benchmark document, but which is pertinent to Ireland's health and safety legal framework should also be included in a suitable Irish guidance document (see appendix B and C).

5.2.5 Clarity for developers

Recommendation 7: Continued work is required to provide clarity around identified gaps, partial gaps and regulator interfaces in Ireland's health and safety ORE legal framework to feed into a guidance document and provide clarity for ORE developers.

Recommendation 8: Identified interfaces between multiple health and safety regulators and authoritative agencies should be highlighted to developers to inform them if they need to comply with more than one authoritative agency or piece of legislation. It is recommended that, where possible, efforts are undertaken to resolve ambiguity around these interfaces and to provide a more streamlined process for developers through a Memorandum of Understanding or similar. There are also examples from within Ireland and lessons learnt from defined interfaces e.g., with the MSO and HSA on the Arklow Wind project.

Recommendation 9: Clarity is required around the requirements for certification and regulation of ORE installations and the role of CRU Offshore Division, if any, in regulation of safety risks associated with operational wind farms and/or the certification of installations. The guidance document should provide clarity to ORE developers, in particular where national standards exist which may have higher jurisdiction than international standards in Ireland.

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Appendices

A – Gap Analysis Instruments

Gap Analysis Instrument – Legislation and Guidance

Item No.	Reference Document	Reference Section	Phase 1 - Benchmark Legislation and Guidance			Phase 2 - Benchmark Legislation and Guidance					
			Name of Legislation/Guidance Document	Type of Legislation/Guidance	Summary of the Requirement	Name of Irish equivalent	Type of Legislation/Guidance	Regulators	Comments		
1	RUK	A.1.10.1	The Health and Safety at Work Act 1974	Act	To ensure, so far as is reasonably practicable, the health and safety of those who may be affected by their actions or omissions, whether they be employees, users of equipment or premises, or members of the public; employers have an additional duty to ensure the welfare of their employees at work	Yes	Safety, Health and Welfare at Work Act 2005 - S.I. No. 10/2005	Act	Health and Safety Authority	No Gap	Irish equivalent covers all ORE elements referenced in RUK guidelines. Note: "place of work" includes any, or any part of any, place (whether or not within or forming part of a building or structure), land or other location at, in, upon or near which, work is carried on

Gap Analysis Instrument – Regulators and Authoritative Agencies

Item No.	Reference Document	Reference Section	Phase 1 - Benchmark Regulators and Authoritative Agencies			Phase 2 - Benchmark Regulators and Authoritative Agencies					
			Agency	Function/Responsibility	Jurisdiction	Agency	Function/Responsibility	Jurisdiction			
1	RUK	A.1.10.1	The Health and Safety Executive (HSE)	HSE responsibility is the regulation of work under the HSWA and subsidiary regulations. Investigation of accidents during activities regulated under the HSWA. Prosecution of offences under the HSWA	Great Britain, and offshore activities specified in the AOGBO, taking place within the Territorial Sea and the UK Renewable Energy Zone	Yes	Health and Safety Authority	Monitor compliance with legislation at the workplace and can take enforcement action	Health and Safety in Ireland	No Gap	Some interfaces exist with other agencies see interface section

B – Additional National Guidance

In parallel to the gap analysis against the benchmark document, consideration was also given to additional national guidance which is relevant to the ORE industry in Ireland. By virtue of the jurisdiction for which the benchmark document was prepared there is additional relevant national guidance (relevant to Ireland) which is naturally not included in the benchmark document, but which should be incorporated into a suitable Irish guidance document. This appendix describes guidance developed by national bodies in Ireland. Some of this guidance is specially developed for working offshore and can be directly transferred to ORE industry and operations. Other guidance is non-industry specific but pertinent to the industry (e.g., guidance on working in confined spaces prepared by the HSA).

HSA

The Health and Safety Authority is the national body responsible for occupational health and safety in Ireland. The HSA have produced 21 Codes of Practice. None are ORE specific, but they are still relevant. It is estimated around two thirds would be relevant to a guidance document for the ORE industry. Table 0-1 below lists the relevant codes appropriate for ORE. Other CoP's have been approved by the HSA under Section 64 of the Safety, Health and Welfare at Work Act 2005.

Table 0-1: Health and Safety Authority Guidance

Item No.	Name of Guidance
1	Chemical Agents and Carcinogens Code of Practice 2021
2	Code of Practice for Employers and Employees on the Prevention and Resolution of Bullying at Work
3	Biological Agents Code of Practice 2020
4	Chemical Agents Code of Practice 2020
5	Code of Practice for Inland diving and Inshore diving
6	Code of Practice for Offshore diving
7	Code of Practice for Avoiding Danger from Overhead Electricity Lines
8	Code of Practice for Access and Working Scaffolds
9	Code of Practice for the Design and Installation of Anchors

Item No.	Name of Guidance
10	Code of Practice for Working in Confined spaces
11	Code of Practice for Avoiding Danger from Underground Services
12	Code Of Practice for Safety in Roof work
13	Code of Practice for Health and Safety in Dock Work
14	Code of Practice for Rider-Operated Lift Trucks: Operator Training and Supplementary Guidance

IRCG

The Irish Coast Guard’s key role is search and rescue and maritime safety for the Irish Marine Search and Rescue Region. The Irish Coast Guard implements International Maritime Organisation’s Search and Rescue Convention by producing guidance and national plans as listed below in Table 0-2. These plans should be reviewed, and consideration given as to any revisions required for the implementation of an ORE safety regime.

Table 0-2: Irish Coast Guard Guidance

Item No.	Name of Guidance
1	National Search and Rescue Plan
2	National Maritime Oil/HNS Spill Contingency Plan
3	Framework for Major Emergency Management

WEI

Wind Energy Ireland (WEI) is the representative body for the Irish wind industry. WEI carry out and commission research to influence Government policy on renewable energy. WEI work closely with statutory bodies and State agencies to support the growth of renewable energy and wind energy in particular. WEI have produced 3 best practice guidelines for the offshore wind industry as listed below in Table 0-3. Again, these guidelines and any others produced by WEI should be signposted within the Irish ORE Health and Safety Guidance document.

Table 0-3: Wind Energy Ireland Guidance

Item No.	Name of Guidance
1	Best Practice Guidelines for Operation of Wind Farm High Voltage Electrical Installations
2	Best Practice Principles in Community Engagement & Community Commitment
3	Best Practice Guidelines for the Irish Wind Energy Industry

C – Additional International Guidance

There is also a considerable amount of industry specific international guidance available for reference, most of which has been developed and published after the issue of the benchmark document. International guidance is continually being published and developed by relevant agencies such as G+, GWO, IMO, IMCA and ICAO. These guidelines represent industry best practice and should also be signposted and incorporated into a suitable Irish guidance document.

G+

G+ is a privately funded organisation funded by seven developers. This organisation develops good practice guidelines for ORE projects and prepares industry statistics. Their 10 guidelines are summarised in Table 0-4. All documents should be signposted in any industry guidance prepared for the ORE industry.

Table 0-4: G+ Guidance

Item No.	Name of Guidance
1	G+ Integrated Offshore Emergency Response (G+ IOER)
2	Good practice guidelines for safe helicopter operations in support of the global offshore wind industry - Section A
3	Good practice guidelines for safe helicopter operations in support of the global offshore wind industry - Section B
4	Reliable securing booklet for offshore wind
5	The safe management of small service vessels used in the offshore wind industry
6	Working at height in the offshore wind industry
7	G+ Offshore wind farm transfer
8	G+ Improving compliance workshop: basic lifting operations
9	G+ Floating offshore wind hazard identification (HAZID)
10	Case study on reducing manual handling and ergonomics related incidents in the offshore wind industry

GWO

Global Wind Organisation is a non-profit body founded and owned by its members – all of whom are working in the wind turbine industry. GWO have published a varied range of training standards for wind industry safety and technical training requirements. All publications (9 standards and 5 refresher of standards) are industry specific and should be referenced within an ORE guidance document. GWO Basic Safety Training is mandatory to work in the wind turbine industry. Table 0-5 below has summarised these 9 standards.

Table 0-5: Global Wind Organisation Guidance

Item No.	Name of Guidance
1	Advance Rescue Training Standard
2	Basic Safety Training Standard
3	Basic Technical Training Standard
4	Blade Repair Training Standard
5	Control of Hazardous Energies Training Standard
6	Enhanced First Aid Training Standard
7	Lifting Training Standard
8	Slinger Signaller Training Standard
9	Wind Limited Access Training Standard

IMO

The International Maritime Organization is the global standard-setting authority for the safety, security, and environmental performance of international shipping. IMO have over 160 publications/guidance available relating to safety, security and environmental performance of international shipping. A selection of relevant standards and guidelines from IMO which should be included in an Irish Guidance document are listed in Table 0-6.

Table 0-6: International Maritime Organization Guidance

Item No.	Name of Guidance
1	Basic Documents: Volume I, 2018 Edition (IC001E)
2	Basic Documents: Volume II, 2022 Edition (KC007E)

Item No.	Name of Guidance
3	Casualty Investigation Code, 2008 Edition (I128E)
4	Code of Safety Diving Systems, 1997 Edition (E808E)
5	Collision Regulations Convention (COLREGS), 2003 Edition (IB904E)
6	Dangerous Goods in Port Areas, 2007 Edition (IB290E)
7	Fire Safety Systems (FSS) Code, 2015 Edition (IB155E)
8	Fishing Vessel Personnel Guidance Document, 2001 Edition (KA948E)
9	Guide to Cold Water Survival, 2012 Edition (IB946E)
10	Guide to Maritime Security and ISPS Code, 2021 Edition (IB116E)
11	Guidelines for the Implementation of MARPOL Annex V, 2017 Edition (IC656E)
12	Guidelines on Fatigue, 2019 Edition (IA968E)
13	IAMSAR Manual: Volume I, 2022 Edition (IK960E)
14	IAMSAR Manual: Volume II, 2022 Edition (IH961E)
15	IAMSAR Manual: Volume III, 2022 Edition (IK962E)
16	International Code of Signals, 2005 Edition (IB994E)
17	International Convention on Load Lines 1966, 2021 Edition (IC701E)
18	Manual on Maritime Safety Information, 2015 Edition (KB910E)
19	Offshore Supply Vessels Guidelines, 2006 Edition (EA807E)
20	Safety Code for Fishermen & Fishing Vessels(A), 2006 Edition (IA749E)

IMCA

International Marine Contractors Association is a trade body that develops standards and guidance for the marine trade. IMCA has established a hierarchy of compliance terms for its technical documents, like the nomenclature used elsewhere in the wider offshore energy industry, using the following three descriptors:

- IMCA Code of Practice (CoP) – A document produced by the Association, the uniform application of which is recognised as essential for the safe and efficient conduct of marine contracting projects. IMCA expects the highest level of compliance with this category of document from its members.
- IMCA Recommended Practice (RP) – A document produced by the Association, the uniform application of which is recognised as necessary for the safe and efficient conduct of marine contracting projects. IMCA expects a high level of compliance with this category of document from its members.

- IMCA Informative Guidance (IG) – A document produced by the Association, the application of which is recognised as useful for the safe and efficient conduct of marine contracting projects. IMCA expects its members to take appropriate account of this category of document when planning, managing and conducting their marine contracting projects.

These guidelines are then further broken down into 10 topics as shown in Table 0-7.

Table 0-7: International Marine Contractors Association Guidance

Topic No.	Name of Topic	CoP	RP	IG
1	Competing and Training	0	9	4
2	Diving	2	59	5
3	Environmental sustainability	1	0	0
4	Health, Safety, Security and Environment	0	15	52
5	Legal Contracts, Insurance and Compliance	1	0	13
6	Lifting and Rigging	1	10	1
7	Marine	3	40	36
8	Marine Policy and Regulatory Affairs	0	0	4
9	Offshore Survey	0	7	12
10	Remote systems and ROV	1	12	7
	Totals	9	152	134

ICAO

International Civil Aviation Organization SARPS (Standards and Recommended Practices) for each area of ICAO responsibility are contained in 19 Annexes. Each Annex deals with a particular subject area. Annexes 2, 5, 7 & 8 contain international standards and no recommended practices (RPs). The remaining 15 Annexes contain both.

Table 0-8: International Civil Aviation Organization Guidance (SARPS)

Item No.	Name of Guidance
1	Annex 1 - Personnel Licensing
2	Annex 2 - Rules of the Air
3	Annex 3 - Meteorological Services

Item No.	Name of Guidance
4	Annex 4 - Aeronautical Charts
5	Annex 5 - Units of Measurement
6	Annex 6 - Operation of Aircraft
7	Annex 7 - Aircraft Nationality and Registration Marks
8	Annex 8 - Airworthiness of Aircraft
9	Annex 9 - Facilitation
10	Annex 10 - Aeronautical Telecommunications
11	Annex 11 - Air Traffic Services
12	Annex 12 - Search and Rescue
13	Annex 13 - Aircraft Accident and Incident Investigation
14	Annex 14 - Aerodromes
15	Annex 15 - Aeronautical Information Services
16	Annex 16 - Environmental Protection
17	Annex 17 - Security
18	Annex 18 - The Safe Transportation of Dangerous Goods by Air
19	Annex 19 - Safety Management

ICAO Procedures for Air Navigation Services (PANS) are documents approved by the ICAO council and recommended to states for worldwide application. As such they attempt to make air navigation services uniform across the world. The PANS are listed below in Table 0-9.

Table 0-9: International Civil Aviation Organization Guidance (PANS)

Item No.	Name of Guidance
1	Procedures for Air Navigation Services - Air Traffic Management
2	Procedures for Air Navigation Services - Aircraft Operations
3	Procedures for Air Navigation Services - Abbreviations and Codes
4	Procedures for Air Navigation Services - Aerodromes
5	Procedures for Air Navigation Services - Aeronautical Information Management
6	Procedures for Air Navigation Services - Training

D – Exclusions in the Benchmark Document

While reviewing the benchmark document and incorporating feedback from the stakeholder engagement workshops it was noted that some additional legislation and guidance relevant to the ORE industry had been excluded or not captured in the document, either due to omission or as a result of legislation or guidance having been brought into place since the document was published in 2014.

It is recommended that the additional legislation and guidance listed below in Table 0-10 should be incorporated into a suitable Irish health and safety guidance document for the ORE industry.

Table 0-10: Additional Legislation and Guidance

Item No.	Legislation and Guidance
Marine	
1	Sea Pollution Acts 1991-2006
2	Maritime Radio Operating procedures for small craft
3	International Code of Safety for Ships Carrying Industrial Personnel
4	Merchant Shipping (Dangerous Goods) Rules, 1992 - S.I. No. 391/1992
5	Maritime Area Planning Act 2021 – SI No. 50/2021
6	MCA MGN 372 Amendment 1 (November 2022) Safety of Navigation: Guidance to Mariners Operating in the Vicinity of UK Offshore Renewable Energy Installations.
Health and Safety	
7	Petroleum Safety Framework (PSF)
8	ISO 19901-8:2014 Petroleum and natural gas industries — Specific requirements for offshore structures — Part 8: Marine soil investigations
9	Safety, Health, and Welfare at Work (Fishing Vessels) Regulations 1999
Electrical Health and Safety	
10	Competence of Persons controlling, operating, and working on HV Apparatus 2022
11	Safety, Health, and Welfare at Work (Electromagnetic Fields) Regulations 2016 - S.I. No. 337/2016
12	I.S. EN 50110-1:2013 Operation of Electrical Installations - Part 1: General Requirements

Item No.	Legislation and Guidance
13	S.R. 61936:2019 Guidelines on the Application of I.S. EN 61936-1:2010 & A1:2014, Power Installations Exceeding 1 kV a.c. - Part 1: Common Rules
Emergency Response	
14	International Convention on Maritime Search and Rescue
15	Maritime and Coastguard Agency (MCA) MGN 654 and Annexes 1 to 6: Safety of Navigation: Offshore Renewable Energy Installations – Guidance on UK Navigational Practice, Safety and Emergency Response.
16	MCA Offshore Renewable Energy Installations: Requirements, guidance, and operational considerations for SAR (Search and Rescue) and Emergency Response version 3 November 2021
Training Standards/Certificates	
17	International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW)
Aviation	
18	Basic Regulation (Regulation (EU) 2018/1139)
19	Airworthiness and Environmental Certification (Regulation (EU) No 748/2012)
20	Additional Airworthiness Specifications (Regulation (EU) No 2015/640)
21	Continuing Airworthiness Regulation (EU) No 1321/2014
22	Commission Regulation (EU) No 1178/2011
23	Air Operations (Regulation (EU) No 965/2012)
24	Unmanned Aircraft Systems (Regulation (EU) 2019/947 and Regulation (EU) 2019/945)
25	ICS Guide to Helicopter/Ship Operations 2021
26	Irish aviation authority (Upper airspace and Rockets) Order 2023 (S.I. No. 25/2023)
Environmental	
27	Protection of the Environment Act 2003 - SI No. 27/2003
Wind Turbine	
28	CAA CAP 764: CAA Policy and Guidelines on Wind Turbines

