

ORE Catapult, NZTC, OEUK

Guiding Principles for the safe decarbonisation of offshore oil and gas facilities through the integration of wind turbines.

1. Introduction

This document has been developed to provide a clear, practical framework for the safe decarbonisation of offshore oil and gas installations through integration with offshore wind generation. Its purpose is to explain how the principal regulatory regimes may apply across typical integration scenarios and to support a consistent, proportionate and risk-based approach to project planning, design, construction and operation.

The document is intended for operators, developers, duty holders and other parties involved in Targeted Oil and Gas (TOG) projects or comparable offshore electrification developments. It is not a substitute for legal duties, regulatory guidance or project-specific risk assessment; rather, it sets out guiding principles and interface expectations to help stakeholders understand the likely regulatory boundaries, identify where early engagement is needed, and align on safe delivery arrangements.

2. Purpose, Scope and Expectations

This document applies to offshore oil and gas decarbonisation projects where electrical power is supplied, in whole or in part, from offshore wind generation. It focuses on the interaction between offshore oil and gas safety case arrangements and the regulatory frameworks typically applying to offshore wind development, including where assets, responsibilities and operational boundaries are shared or separated.

It does not provide legal interpretation, remove the need for engagement with the relevant regulators, or predetermine whether a particular project feature constitutes a material change. Users should expect to apply these principles alongside project-specific engineering, risk assessment and regulatory dialogue. Where circumstances differ from the generic scenarios described, the expectation is that duty holders and project parties will adopt a transparent, evidence-based approach and seek early clarification where required.

2. Regulatory Landscape

Offshore wind developments and offshore oil and gas installations may occupy similar spatial areas and can involve comparable project phases, operational interfaces and emergency response arrangements. However, there are important differences in their risk profiles. Oil and gas installations present major accident hazards because of the hydrocarbon inventories held on board, whereas offshore wind is generally regarded as a high-hazard industry with a different risk character. As a result, these sectors are typically regulated under different legislative frameworks, reflecting the nature and scale of the risks associated with each.

Where these industries are connected, the applicable regimes can overlap, and clarity on legal responsibilities across the project lifecycle is therefore essential. Both regimes sit within the overarching framework of the Health and Safety at Work etc. Act 1974.

The Health and Safety at Work etc. Act 1974 provides the overarching legal framework for occupational health and safety in Great Britain and, through related offshore provisions, underpins relevant duties applying to offshore wind operations. It sets the general duties on employers, the self-employed and others to ensure, so far as is reasonably practicable, the health and safety of workers and others who may be affected by their activities. Within this document, it provides the broad legal basis for safe operation, maintenance and management of offshore wind assets once they are in service.

2.1. Oil and Gas Legislation

Offshore oil and gas installations are subject to a permissioning regime that requires a safety case to be submitted to, and accepted by, the Health and Safety Executive before relevant operations commence.

The Offshore Installations (Offshore Safety Directive) (Safety Case etc.) Regulations 2015 set out the principal offshore safety case regime for oil and gas operations in external waters. They require duty holders to identify major accident hazards, demonstrate that risks have been reduced as low as reasonably practicable, and establish suitable safety and environmental management, verification and emergency response arrangements before operations begin.

These Regulations are relevant to offshore electrification projects because, depending on the design and operating model, associated wind turbine infrastructure or connected assets may affect the major accident risk profile of the oil and gas installation, the safety case boundaries, and the arrangements that must be described within the accepted safety case.

The Offshore Installations and Pipeline Works (Management and Administration) Regulations 1995 establish key management and administrative duties for offshore installations and pipeline works, including appointment of installation managers, co-operation, communication, operational information and other controls that support safe day-to-day operation.

The Offshore Installations and Wells (Design and Construction, etc.) Regulations 1996 set requirements for the design, construction, operation, maintenance and integrity of offshore installations and wells. In the context of integration projects, these duties are relevant where new connected infrastructure, modifications or interfaces could influence the integrity, design assumptions or safe operation of the oil and gas installation.

The Health and Safety at Work etc. Act 1974 (Application outside Great Britain) Order 2013 extends key provisions of the Health and Safety at Work etc. Act 1974 to specified offshore areas and activities outside Great Britain, including offshore installations and certain connected energy structures. It is particularly important in this context because it helps establish the legal basis for applying health and safety law to offshore oil and gas and associated energy activities beyond Great Britain's land territory.

2.2. Offshore Wind Legislation

Offshore wind developments are generally subject to the construction health and safety framework during the design and construction phases, with ongoing operational duties sitting

within the broader framework of the Health and Safety at Work etc. Act 1974. For the purposes of this document, the key consideration is how those duties apply to wind turbine infrastructure associated with offshore oil and gas electrification projects, particularly where responsibilities, physical interfaces or work activities may interact with an oil and gas installation.

The Construction (Design and Management) Regulations 2015 establish the principal legal framework for managing health, safety and welfare during construction projects. They place duties on clients, designers, principal designers, contractors and principal contractors to plan, manage, monitor and coordinate work so that risks are identified early and controlled throughout the design and construction process. In the context of this document, these Regulations are particularly relevant to the design, installation and commissioning of offshore wind turbine generators, cables and associated infrastructure forming part of an offshore electrification project.

Key CDM features relevant to this document include the requirement for clear duty holder appointments, effective pre-construction information, coordination between designers and contractors, management of interfaces during construction, and preparation of a construction phase plan. These features are important where offshore wind infrastructure is being developed in proximity to, or in connection with, an operating oil and gas installation, because they support clarity of responsibility and control of risks across organisational and physical boundaries.

2.3.Regulatory Engagement

Given the complexity of offshore legislation a workgroup was formed including companies from both sectors, industry bodies, stakeholders and the Health and Safety Executive to determine the likely outcome from various operational scenarios. This document summarises the output of that collaborative workgroup. The following integration scenarios help illustrate how these regulations would apply.

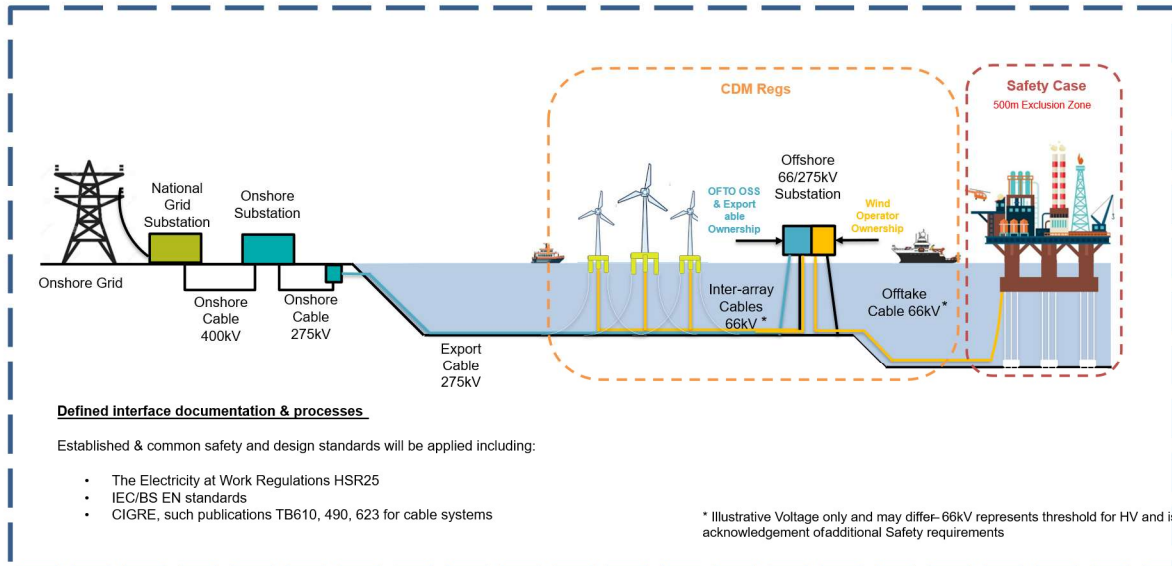
3. Overview of Integration Scenarios

The workgroup collaborated to identify the likely operating models for offshore electrification projects involving integration between oil and gas installations and offshore wind infrastructure. From this work, three main modes of operation were identified. These are described below, together with the regulatory approach likely to be taken by the Health and Safety Executive in relation to design, construction, operation and duty holder responsibilities.

3.1.Grid Connected Scenario

In the grid-connected scenario, the offshore oil and gas installation is located some distance from the wind farm and remains operationally independent from it. The geographical location of the turbine is largely irrelevant as the matter under consideration is who owns and manages the risk, effectively who is the duty holder. The installation retains its own safety case and receives an electrical power supply via a direct connection from an offshore substation. The wind farm, in turn, is connected separately to shore through its own export cable. In this arrangement, the wind farm and the offshore installation are operated independently, with the installation effectively taking a power feed from the wider offshore electricity network rather than being integrated into the wind farm's operational control arrangements.

Grid connected Scenario



In this scenario, the installation operator may still need to consider whether the introduction of an alternative power supply constitutes a material change to the safety case, particularly where there are implications for platform safety and environmentally critical elements, associated performance standards, or the management of connected activities during hook-up and commissioning. The extent of any required update will depend on the content of the existing accepted safety case and the nature of the proposed change.

The wind turbine owner or project developer would also be expected to meet the applicable requirements of the Construction (Design and Management) Regulations 2015, including the appointment of the relevant duty holders. In a grid-connected model of this kind, it is likely that the installation operator would assume the role of client for the purposes of CDM and, in that capacity, appoint the principal designer and principal contractor as required. Those parties would then be expected to discharge their statutory duties, which may include notification, coordination of design and construction activities, and preparation of the health and safety file. Where a designer is not separately appointed, the relevant design duties may rest with the client. As with all CDM appointments, those selected should have the organisational capability and competence to fulfil their roles.

Ongoing duties would remain during the operation and maintenance phase to ensure compliance with the applicable health and safety framework. Where the wind turbine infrastructure is regulated through CDM and the general health and safety framework, rather than falling within the offshore oil and gas safety case regime, a verification scheme would not ordinarily be expected for that infrastructure.

In practical terms, this scenario is likely to involve a limited number of offshore oil and gas safety case changes, alongside a continuing requirement to meet the applicable construction and operational health and safety duties associated with the wind turbine infrastructure.

Installation duty holder

- Retain responsibility for the installation safety case and determine whether the revised power supply arrangements amount to a material change requiring update and acceptance.
- Assess the effect of the new power connection on major accident hazards, safety and environmentally critical elements, performance standards, and hook-up and commissioning activities.
- Ensure that interface arrangements with the wind farm developer or operator are clearly defined where activities could affect the installation.
- Where acting as client under CDM, make the necessary appointments and ensure that those appointed have the capability and organisational capacity to discharge their duties.

Wind farm owner or operator

- Comply with the applicable requirements of the Construction (Design and Management) Regulations 2015 for the design, installation and commissioning of the wind turbine infrastructure.
- Support clear allocation of duty holder roles, including coordination with the client, principal designer and principal contractor as relevant.
- Plan and manage construction and installation risks at the interface with the offshore installation, including communication and coordination during connected works.
- Maintain compliance with the relevant health and safety framework during operation and maintenance, noting that a verification scheme would not ordinarily be expected where the wind turbine infrastructure remains outside the offshore oil and gas safety case regime.

3.2. Islanded Scenario

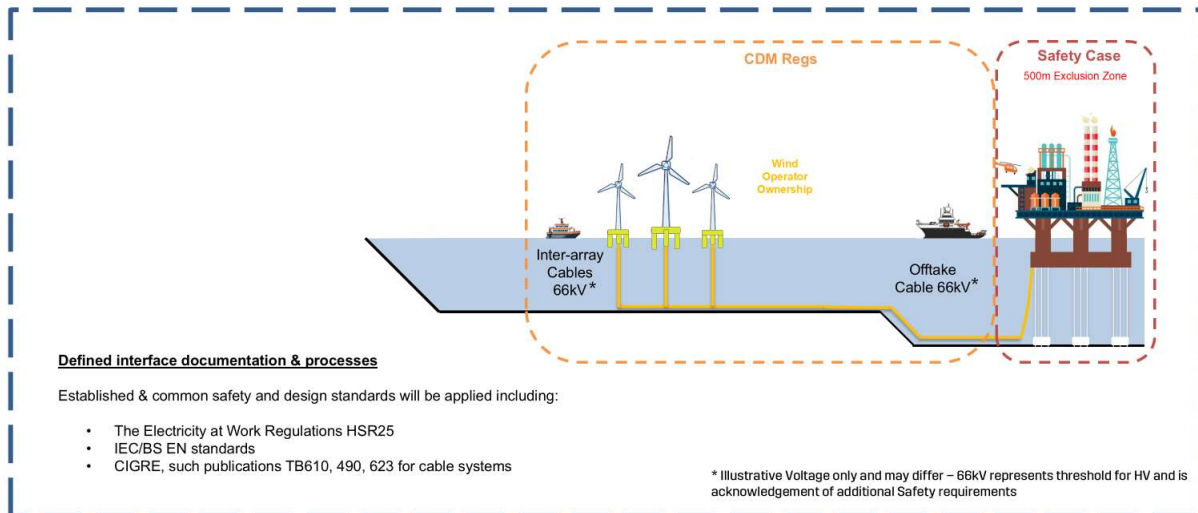
An islanded scenario describes an arrangement in which the offshore installation and the wind turbine or turbines are directly connected and are notionally dependent on one another. In this model, the development is not part of wider energy infrastructure such as a shore-connected grid, and the wind turbine infrastructure exists primarily to supply power to the installation. There may be additional connected installations within the same arrangement, but without the offshore installation there would be no basis for the wind turbine development. In that sense, the turbine or turbines are “islanded” within a self-contained offshore power arrangement rather than operating as part of a broader electricity network.

3.2.1. Separate O&G Operator/ Duty Holder & WTG Owner/ Operator

In this islanded scenario, the offshore installation is directly connected to the wind turbine generator or generators for the purpose of receiving power, but the installation duty holder and the WTG owner and operator remain separate parties. Although the development is mutually dependent in the sense that the wind turbine infrastructure exists to supply the installation, there is no wider grid connection and no broader electricity network function. As with the grid-connected scenario, the principal feature is the provision of power to the installation; however, the

significance here is that the operational responsibilities, management systems and regulatory duties remain divided between two separate duty holders.

**Islanded Scenario – Separate O&G
Operator/Duty holder & WTG owner/operator**



In this scenario, the physical location of the wind turbine generator is less significant than the allocation of ownership, operational control and risk management responsibilities. The key consideration is who acts as the duty holder for the relevant assets and activities. Where the wind turbine infrastructure is separately owned and operated, and is not treated as a supplementary unit to the installation, it is more likely to be regarded as an energy structure regulated through the Construction (Design and Management) Regulations 2015 rather than forming part of the offshore oil and gas safety case regime. In those circumstances, no safety and environmentally critical elements would ordinarily be expected to arise for the turbine itself under the installation safety case, although the interface with the installation would still need to be considered carefully.

The installation operator may still need to consider whether the introduction of an alternative power supply gives rise to a material change to the safety case, particularly where there are consequences for platform safety and environmentally critical elements, associated performance standards, or the management of connected activities during hook-up and commissioning. The extent of any required update will depend on the scope of the original accepted safety case and the nature of the proposed arrangements.

The turbine owner would also be expected to comply with the applicable requirements of the Construction (Design and Management) Regulations 2015, including the appointment of the relevant duty holders. In this type of arrangement, it is likely that the installation operator would act as client for the purposes of CDM and, in that capacity, appoint the principal designer and principal contractor as required. Those parties would then be expected to discharge their statutory duties, which may include notification, coordination of design and construction activities, and preparation of the health and safety file. Where no separate designer is appointed, the relevant

design duties may rest with the client. As with all CDM appointments, those selected should have the organisational capability and competence to fulfil their roles.

Ongoing duties would remain during the operation and maintenance phase to ensure compliance with the applicable regulatory framework. Where the wind turbine infrastructure is regulated through CDM and the general health and safety framework, rather than forming part of the offshore oil and gas safety case regime, a verification scheme would not ordinarily be expected for that infrastructure.

In practical terms, this scenario is likely to involve a limited number of offshore oil and gas safety case changes, together with an ongoing requirement to comply with the applicable construction and operational duties associated with the wind turbine infrastructure. A defining feature of this model is that ownership and operation of the turbine remain separate from ownership and operation of the installation.

By contrast, where ownership and operation of the turbine and the installation sit with the same party, the turbine is more likely to be treated as a supplementary unit and brought within the installation safety case. In that situation, where elements of the turbine are determined to be safety critical, they would ordinarily be expected to fall within the verification arrangements applying to the installation, in these scenarios the approach described in 3.2.2. should be considered.

Installation duty holder

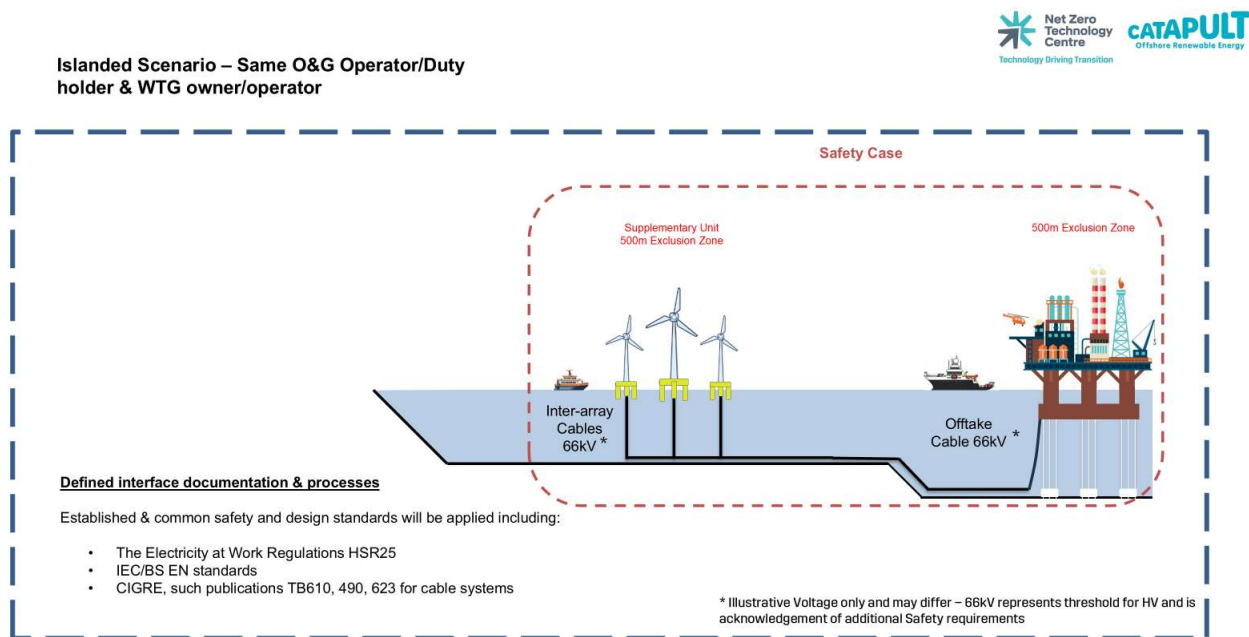
- Retain responsibility for the installation safety case and determine whether the connected power arrangements give rise to a material change requiring update and acceptance.
- Assess the effect of the connection on major accident hazards, safety and environmentally critical elements, performance standards, and hook-up and commissioning activities affecting the installation.
- Define and manage the interface with the separate turbine owner or operator where activities, responsibilities or emergency arrangements may affect the installation.
- Where acting as client under CDM, make the necessary appointments and ensure that those appointed have the capability and organisational capacity to discharge their duties.

Wind turbine owner or operator

- Comply with the applicable requirements of the Construction (Design and Management) Regulations 2015 for the design, installation, commissioning, operation and maintenance of the wind turbine infrastructure.
- Support clear allocation of duty holder roles, including coordination with the client, principal designer and principal contractor as relevant.
- Plan and manage construction and operational risks at the interface with the offshore installation, including communication, coordination and emergency arrangements where activities are connected.
- Maintain compliance with the relevant health and safety framework during operation and maintenance, recognising that the turbine would not ordinarily be expected to fall within the offshore oil and gas verification regime where it remains outside the installation safety case.

3.2.2. Same O&G Operator/ Duty Holder & WTG Owner/ Operator

In this scenario, the offshore installation duty holder and the owner and operator of the connected wind turbine generator or generators are the same company. As a result, a greater degree of operational interdependence is likely. This may include, for example, common maintenance management systems, shared maintenance teams, shared supply vessel arrangements, and, in some cases, combined operational control through a single offshore control room. This approach may also be particularly relevant where the turbine infrastructure presents a more significant interaction with major accident hazard management.



Where the turbine is designed, acquired or owned by the installation operator, it is more likely to be regarded as that operator's asset and, in turn, to fall within the same duty holder arrangements. In this type of dedicated islanded development, the turbine infrastructure exists primarily to meet the power demands of the offshore installation, rather than to serve a wider energy network.

Where the turbine infrastructure is also operated and maintained by the installation operator, for example through the use of installation personnel, shared emergency response arrangements or integrated operational systems, it is more likely to meet the definition of a supplementary unit under the applicable offshore management framework. In those circumstances, the turbine would generally be expected to be regulated as part of the installation safety case, with a material change submission where required.

Where elements of the turbine are identified as safety critical within that safety case context, they would ordinarily be expected to fall within the verification arrangements required by the Offshore Installations (Offshore Safety Directive) (Safety Case etc.) Regulations 2015.

In practical terms, this scenario is likely to involve a material change submission to the installation safety case together with an ongoing requirement to comply with the applicable offshore safety case, management and verification obligations.

The Construction (Design and Management) Regulations 2015 may still be relevant to discrete construction activities associated with installation of the turbine infrastructure, such as tow-out, mooring or connected construction works. However, in this same-operator islanded model, a dual regulatory regime would not ordinarily be expected. Instead, the regulatory approach is more likely to favour the offshore oil and gas safety case regime, including during the construction phase, where that framework already captures the relevant major accident hazard and operational control arrangements.

In a dedicated islanded model where the same party owns and operates both the installation and the turbine infrastructure, the overall regulatory approach is more likely to treat the turbine as a supplementary unit associated with the installation and to regulate it through the offshore oil and gas framework. This reflects the degree of operational integration and avoids unnecessary duplication where offshore safety case duties already address the relevant major accident hazard management arrangements.

Installation duty holder / wind turbine owner and operator

- Determine whether the connected wind turbine infrastructure should be treated as a supplementary unit forming part of the installation safety case.
- Make any material change submission required to update the accepted safety case before the revised arrangements are brought into operation.
- Ensure that turbine-related major accident hazards, safety and environmentally critical elements, verification arrangements, emergency response, maintenance and operational interfaces are addressed within the safety case and supporting management systems.
- Manage the design, installation, commissioning, operation and maintenance of the wind turbine infrastructure within the same overall duty holder framework as the offshore installation.
- Ensure that any turbine elements identified as safety critical in the context of the installation are captured within the relevant verification and risk management arrangements.
- Maintain ongoing compliance with the applicable offshore safety case, management and verification obligations throughout construction, commissioning, operation and maintenance, recognising that the offshore safety case regime is the primary framework likely to apply in this scenario.

4. Dialogue with Health and Safety Executive

Given that many TOG projects are still at an early stage of development, proactive ongoing dialogue with the Health and Safety Executive is strongly recommended. Such engagement should be used to set out the key characteristics of the proposed development, support early alignment between the company and the regulator on the scenario under which the project is most likely to be regulated, and identify any critical features that could alter that position if they change during project development.