

Appendix 3: Existing Controls

A3.1 Introduction

The summary below is a contextual overview of existing controls relevant to the environmental management of UK offshore energy activities, including offshore oil and gas, gas and carbon dioxide storage, and offshore renewables. It is not intended to be a comprehensive guide to the applicable environmental legislation¹.

A3.1.1 Offshore renewable developments

Under The Crown Estate Act 1961, The Crown Estate is entrusted to manage assets on behalf of the Crown including most of the UK seabed out to 12nm, over half of the foreshore, as well as certain sovereign rights in respect of areas beyond the territorial sea. Such sovereign rights are vested in the Crown by the virtue of the designation of the UK Exclusive Economic Zone (EEZ), formerly covered by areas including the Gas Importation and Storage Zone (GISZ) or Renewable Energy Zone (REZ) under the *Energy Act 2008* and *Energy Act 2004* respectively. The Crown Estate's permission, in the form of a site option Agreement and Lease, is required for the placement of structures or cables on the seabed, this includes offshore wind farms and their ancillary cables and other marine facilities. Potential offshore wind farm developers also require statutory consents from a number of Government departments before development can take place. When all necessary statutory consents are obtained by the developer, The Crown Estate can grant a site lease for a development. Under the *Planning Act 2008*, the Planning Inspectorate (PINS) assumed responsibility for consent applications for offshore electricity generating stations with a capacity of more than 100MW. While PINS deals with the acceptance and examination of the application and provides a recommendation to the relevant Secretary of State (in this case of Energy and Climate Change), the ultimate decision maker in these cases is the Secretary of State.

The *Marine and Coastal Access Act 2009* provided for the creation of the Marine Management Organisation (MMO) which then took over the processing of offshore renewable energy generating station applications under section 36 of the *Electricity Act 1989* (i.e. those not considered to be nationally significant, >1MW but below 100MW) in English and Welsh territorial waters and the UK EEZ (excludes the territorial waters of Northern Ireland and Scotland, and the Scottish Renewable Energy Zone). A single Marine Licence is required for activities formerly covered by the Coast Protection Act 1949 and Food and Environment Protection Act 1985 (FEPA). The Welsh Ministers are the marine licensing authority for Welsh territorial waters; in 2013 the responsibility for operation of marine licensing passed to Natural Resources Wales, however, the MMO is responsible for issuing Section 36 consents. Marine renewables² in Scotland and Northern Ireland are out-with the scope of this SEA.

The *Energy Act 2008*, The *Planning Act 2008* and the *Marine and Coastal Access Act 2009* provide a framework for the consenting and decommissioning of offshore marine renewables.

A3.1.1.1 Environmental Impact Assessment

Council Directives (85/337/EEC and 97/11/EC) require Environmental Impact Assessments of specific developments and activities (now codified by Directive 2011/92/EU on the assessment of the effects of

¹ UK legislation can be accessed via www.legislation.gov.uk; OSPAR Agreements, Decisions and Recommendations via www.ospar.org, EU legislation via <http://eur-lex.europa.eu>, Overview of MARPOL and other IMO Conventions via www.imo.org

² Marine licensing in Scotland is the remit of the Scottish Ministers (*Marine and Coastal Access Act 2009* and *Marine (Scotland) Act 2010*), while the Department of the Environment Northern Ireland (DoENI) is responsible for marine licensing in Northern Ireland through the *Marine Act (Northern Ireland) 2013* and the *Marine and Coastal Access Act 2009*.

certain public and private projects on the environment, which is itself amended by Directive 2014/52/EU). The EIA Directive has been transposed into UK law through a number of Regulations (e.g. the *Electricity Works (Environmental Impact Assessment) (England and Wales) Regulations 2000* (as amended) relating to a Section 36 consent and the *Harbour Works (Environmental Impact Assessment) Regulations 1999* (as amended) in relation to the CPA). The Regulations require developers of offshore renewables arrays likely to have a significant effect on the environment to undertake an environmental impact assessment (EIA) of the environmental impact of a development from the construction stage through to decommissioning. The results of these assessments are brought together in an Environmental Statement and submitted with the various licence/consent applications. The consenting authorities are normally content for a developer to provide a single document covering each of the consents applied for, provided that its scope is sufficient to embrace the range of environmental issues which each can be expected to consider. As part of the EIA process, impacts on other users and landscape and seascape issues are also considered.

A3.1.1.2 Habitats & species protection

Regulations make provision for implementing the Birds Directive (2009/147/EC) and the Habitats Directive (92/43/EEC) in the UK and marine areas where the UK has jurisdiction and require Habitat Regulations Assessment to be undertaken before any determination of a consent application can be made dependent on the potential of the activity to have a significant effect on a Natura 2000 site. DEFRA have produced a guidance note on the implications of the EC Wild Birds and Habitats Directives for developers undertaking offshore wind farm developments “Nature Conservation Guidance on Offshore Windfarm Development”.

European Protected Species (EPS) are listed on the Annex IV of the Habitats Directive. Where offshore activities may result in impacts on European Protected Species an assessment has to be carried out, by the developer or person carrying out the activity, to determine the likelihood of committing a disturbance offence. In order to assess the risk, the characteristics of the proposed activity and the associated potential disturbance factors need to be taken into account, in addition to species related information. A wildlife disturbance licence may be required.

In 2003, the UK signed the Convention on Biological Diversity and the OSPAR Convention, international agreements to establish an ecologically coherent network of well-managed Marine Protected Areas (MPAs). The sites in the network will work together to provide more benefits than an individual area could on its own. Directive 2008/56/EC of the European Parliament and of the Council establishing a framework for community action in the field of marine environmental policy (Marine Strategy Framework Directive), which entered into force in July 2008, establishes a framework within which Member States must take measures to achieve or maintain good environmental status (GES) in the marine environment by the year 2020. Included in MSFD measures to achieve GES is the establishment of a cohesive network of Marine Protected Areas which, like the above international commitments, is intended to build on the areas already protected as European marine sites under the Birds and Habitats Directives. Consideration of the effects on MPAs (called Marine Conservation Zones in England and Wales). As part of the UK implementation of such areas, the Marine and Coastal Access Act 2009 and the Acts of devolved administrations provide powers to designate Marine Conservation Zones (MCZs) in England, Wales and Northern Ireland, and equivalent Marine Protected Areas (MPAs) in Scotland. Environmental Statements, and other assessments supporting applications for consent, must include a consideration of the potential impact of the activity on relevant MPAs/MCZs. The MMO have also issued guidance on a Marine Conservation Zone (MCZ) assessment process which is integrated into the marine licence decision making procedure.

A3.1.1.3 Safety zones

Section 95 of and Schedule 16 to the *Energy Act 2004* set out the basic requirements for applying to the Secretary of State for a safety zone to be placed around or adjacent to an offshore renewable energy installation. Following public consultation the *Electricity (Offshore Generating Stations) (Safety Zones) (Applications Procedures and Control of Access) Regulations 2007*, which set out the process to be followed in more detail, were introduced in August 2007.

A3.1.1.4 Decommissioning

The *Energy Act 2004* (Sections 105 to 114) introduced a statutory decommissioning scheme for offshore wind and marine energy installations see Guidance: *Decommissioning of offshore renewable energy installations under the Energy Act 2004* (2011, revised) and 2015 addendum: *Addendum to decommissioning of offshore energy installations under the Energy Act 2004: Tidal Lagoons*. The *Energy Act 2008* further strengthens provisions relating to the decommissioning of offshore renewable installations.

A3.1.2 Oil and gas, gas storage and carbon dioxide storage

The Oil and Gas Authority (OGA) was formally established as an executive agency of DECC in April 2015 and is scheduled to become a Government Company by summer 2016. The OGA has responsibilities including oil and gas licensing, exploration and production, fields, wells and other infrastructure and gas storage³. The *Infrastructure Act 2015* amended the *Petroleum Act 1998* (Part 1A), creating an obligation on the Secretary of State to produce a Strategy for enabling the principal objective of "maximising the economic recovery of UK Petroleum" and for this strategy to be produced by April 2016. DECC is responsible for administering and ensuring compliance of the offshore environmental regulations and the decommissioning of offshore oil and gas, gas storage and carbon dioxide storage installations and pipelines.

A3.1.2.1 Oil and gas

The *Petroleum Act 1998* (as amended), provides the basis for granting licences to explore for and produce oil and gas. Offshore licensing for oil and gas exploration and production has progressed through a series of Seaward Licensing Rounds and a Seaward Production Licence may cover the whole or part of a specified Block/group of Blocks and grants exclusive rights to the holders "to search and bore for, and get, petroleum". The prospective Operator/Developer must demonstrate to the OGA before award that they have the necessary financial, technical, environmental and safety competency to carry out the agreed work programme – see below for details of changes to the operator regime in 2015. Model clauses and conditions are attached to the Licence. Licences typically contain environmental and other conditions. Before Licences are awarded, where relevant DECC undertakes Habitat Regulations Assessment (HRA) in relation to the potential for effects on European sites. A production licence gives that licensee exclusive rights to explore for, drill for and produce oil and gas within a specified area.

There are currently three types of Seaward Production Licence: Traditional Production Licence; Frontier Production Licence and Promote Licence. It should be noted that the existing licence types may be subject to change (e.g. in terms of duration); however, the general principles of the licences set out above are likely to remain the same.

The Offshore Petroleum Licensing (Offshore Safety Directive) Regulations 2015 together with, in particular:

- The *Offshore installations (Prevention of Fire and Explosion and Emergency Response) Regulations 1995* (as amended by the *Offshore Installations (Offshore Safety Directive) (Safety Case etc.) Regulations 2015*)
- The *Merchant Shipping (Oil Pollution Preparedness, Response and Co-operation Convention) Regulations 1998* (as amended by the *Merchant Shipping (Oil Pollution Preparedness, Response and Co-operation Convention) (Amendment) Regulations 2015* – see below - and

³ The Energy Act 2008 provides for a licensing regime that governs the offshore storage of carbon dioxide. The regime applies to storage in the offshore area comprising both UK territorial sea and beyond designated as a gas importation and storage zone (GISZ) (now encapsulated and superseded by the Exclusive Economic Zone) under section 1(5) of the Act. The Secretary of State for Energy and Climate Change is the licensing authority for offshore storage (except within the territorial sea adjacent to Scotland, for which Scottish ministers authorise).

- *The Offshore Installations (Offshore Safety Directive) (Safety Case etc.) Regulations 2015* implement *Directive 2013/30/EU of the European Parliament and of the Council on safety of offshore oil and gas operations* and amending *Directive 2004/35/EC*.

These Regulations also set out the obligations and liability for environmental damages on the offshore licensee(s).

Following a successful licence application, the licensee(s) will be required to undertake the exploration or development activities detailed in the agreed work programme set out in the licence and under *The Offshore Petroleum Licensing (Offshore Safety Directive) Regulations 2015*, must appoint an operator (i.e. well and/or installation) for the relevant phases of the offshore operations; the relevant operator can be a licensee, within a licensee's company group, a licence operator or a third party company.

The Seaward Exploration Licence is an additional type of annual Licence which is non-exclusive and only covers non-intrusive exploration (e.g. survey) whether carried out for the sake of hydrocarbon production, gas storage or CCS. If the holder of a Seaward Exploration Licence wants to explore acreage covered by an existing Production Licence, permission must be gained from the holder of that Production Licence.

A3.1.2.2 Gas storage

The *Energy Act 2008* (as amended), creates a licensing framework for unloading and storage of combustible gas offshore and the Act prohibits the carrying out of certain activities except in accordance with an *Energy Act Licence*:

- Use of a controlled place for the unloading of gas to an installation or pipeline
- Use of a controlled place for the storage of gas
- Conversion of any natural feature in a controlled place for the purpose of storing gas
- Recovery of gas stored in a controlled place
- Exploration of a controlled place with a view to gas storage
- Establishment or maintenance in a controlled place of an installation for the purpose of the above activities

In addition to a licence, a Crown Estate lease relating to the specific part of the seabed and sub-sea formation (i.e. a 3D licence) is required.

This Act also made provision with respect to the interaction between activities regulated under the *Petroleum Act* and gas storage activities. In some cases the storage of gas will also require a petroleum licence, under section 3 of the *Petroleum Act 1998*, as well as a licence under section 4 of the *Energy Act 2008*. This is because the geological feature in which the gas is stored (for instance, a depleted hydrocarbon field) may itself contain indigenous hydrocarbons. As a result, indigenous hydrocarbons will be "produced" when it mixes with stored gas. In the case of other geological features, the amounts of hydrocarbons present may be negligible. If the Secretary of State is satisfied that the amount of hydrocarbons present is insignificant a direction may be given which makes it clear that there is no requirement for a petroleum licence.

A3.1.2.3 Carbon dioxide storage

The *Energy Act 2008* established a licensing regime for the storage of carbon dioxide in areas within UK territorial waters, and in areas beyond those waters which have been designated as the Exclusive Economic Zone (EEZ), formerly the Gas Importation and Storage Zone (GISZ). The Act prohibits the storage of carbon dioxide (with a view to its permanent disposal) except in accordance with a licence granted under the Act.

In order to explore for, drill for or use a geological feature for the long term storage of carbon dioxide in the UK offshore area, an operator must hold:

- A Licence issued by the Secretary of State for Energy and Climate Change under Section 18 of the *Energy Act 2008*, except in respect of activities in the UK territorial sea (12 miles from the baseline) adjacent to Scotland, for which Scottish Ministers are the Licensing Authority.
- A Lease from The Crown Estate for storage activities for all offshore areas, as the right to store gas (including carbon dioxide) in the offshore area is vested in the Crown by virtue of Section 1 of the *Energy Act 2008*.

The Storage of Carbon Dioxide (Licensing etc.) Regulations 2010 (SI 2010/2221) and *The Storage of Carbon Dioxide (Licensing etc.) (Scotland) Regulations 2011* provide more detail of the licensing regime for which the Scottish Minister is the licensing authority for the territorial sea adjacent to Scotland and the Secretary of State is the licensing authority for all other areas of the sea.

A3.1.2.4 Requirement for Environmental Management Systems

All Well and Installation Operators controlling the operation of offshore wells and installations on the UKCS are required to have in place an independently verified Safety and Environmental Management System designed to achieve: the environmental goals of the prevention and elimination of pollution from offshore sources and of the protection and conservation of the maritime area against other adverse effects of offshore activities; and, more generally, to achieve the objectives of the OSPAR Offshore Strategy and the requirements of the Offshore Safety Directive

A3.1.2.5 Consenting etc.

A number of statutory consents are required for offshore activities associated with oil and gas, gas storage and carbon dioxide storage, which variously involve the exploration of prospective basins, production and storage, eventual decommissioning and ancillary developments. Several of these consents are now applied for via the UK Oil Portal system through DECC's Portal Environmental Tracking System (PETs); this has integrated the old style PON14 and PON15 applications under a centralised Master Application Template (MAT) for various activities, e.g. drilling, pipeline operations, production etc, within which are Subsidiary Application Templates (SAT) the Operator can submit for each relevant activity they want to undertake (see below).

The Energy Act (Consequential Modifications) (Offshore Environmental Protection) Order 2010 which came into force in July 2010, broadened the scope of environmental legislation which was developed for the offshore oil and gas industry (and which underpins many of the controls set out below) such that it covers the storage and unloading of combustible gas and the storage of carbon dioxide. Through amendment, the Order applies the following legislation to gas and carbon dioxide storage activities, subject to geographical limitations to reflect the different devolution settlements relating to offshore activities: the *Offshore Petroleum Production and Pipelines (Assessment of Environmental Effects) Regulations 1999* (as amended); the *Offshore Petroleum Activities (Conservation of Habitats) Regulations 2001* (as amended); *The Offshore Combustion Installations (Pollution Prevention and Control) Regulations 2013*; the *Offshore Marine Conservation (Natural Habitats, &c) Regulations 2007* (as amended); *The Greenhouse Gas Emissions Trading Scheme Regulations 2012* (as amended); *The Offshore Chemical Regulations 2002* (as amended); *The Offshore Petroleum Activities (Oil Pollution Prevention and Control) Regulations 2005* (as amended); *Offshore Marine Conservation (Natural Habitats, &c) Regulations 2007* (as amended); *REACH Enforcement Regulations 2008* (as amended) and *The Fluorinated Greenhouse Gases Regulations 2015*.

A3.1.2.6 Environmental Impact Assessment

Approval for development programmes and consent for wells, extended well tests, incremental projects and production consents are contingent on complying with the requirements of the *Offshore Petroleum Production and Pipe-lines (Assessment of Environmental Effects) Regulations 1999* (as amended). An Environmental Statement (ES) is mandatory for certain projects including new and incremental

developments with expected production >500 tonnes of oil/day or 500,000 cubic metres of gas/day and new pipelines with expected production >40km in length and 800mm in diameter.

A number of projects (including the drilling of wells) may not need an ES to be prepared if a preliminary assessment demonstrates to the satisfaction of the Secretary of State that the project is unlikely to cause a significant adverse environmental impact. In such circumstances a direction from the Secretary of State may be sought that an ES is not required using the appropriate Drilling Operations MAT, EIA Direction SAT along with the other relevant SAT applications, e.g. Chemical Permit SAT. The application must, as far as possible, be a standalone document and contain sufficient information about the proposed project, its expected location and an environmental assessment to provide a basis for a determination to be made.

A3.1.2.7 Habitats & species protection

Various Regulations implement European Directives for the protection of habitats and species namely, Council Directive 92/43 on the conservation of natural habitats and of wild fauna and flora and Council Directive 2009/47/EC (the codified version of 79/409/EEC) on the conservation of wild birds in relation to oil and gas (and now also gas storage and carbon dioxide storage) activities carried out in whole or in part on the UKCS. The Competent Authority, will, if considered that an activity completed under a project consent may have a significant effect on a Special Area of Conservation (SAC) or Special Protection Area (SPA), conduct a Habitat Regulations Assessment prior to granting the consent.

European Protected Species (EPS) are listed on the Annex IV of the Habitats Directive. Where offshore activities may result in impacts on European Protected Species an assessment has to be carried out, by the developer or person carrying out the activity, to determine the likelihood of committing a disturbance offence. In order to assess the risk, the characteristics of the proposed activity and the associated potential disturbance factors need to be taken into account, in addition to species related information. A wildlife disturbance licence may be required.

In 2003, the UK signed the Convention on Biological Diversity and the OSPAR Convention, international agreements to establish an ecologically coherent network of well-managed Marine Protected Areas – see description earlier in this Appendix. Environmental Statements, and other assessments supporting applications for consent via the Portal, must include a consideration of the potential impact of the activity on relevant MPAs/MCZs.

A3.1.2.8 Consent to conduct a survey

Geophysical surveys, pipeline route, site, 2D, 3D, 4D shallow seismic, vertical seismic profiling (VSP) check shots, sub-bottom profiling, shallow borehole, all require consent or notification under *The Offshore Petroleum Activities (Conservation of Habitats) Regulations, 2001* (as amended). The application format is the Standalone Application MAT and associated Geological Survey SAT, submitted to the DECC Portal. Applications for consent in acoustically sensitive areas must be accompanied by narrative environmental assessment with modelling of sound propagation and consideration of impact on sensitive receptors. Consideration is given to the requirement for an Appropriate Assessment under the Habitats Directive in relation to the potential for effects on SACs. The application is subject to a wider notification process involving fishermen and others who may have interests in the area. Application of JNCC guidelines for minimising acoustic disturbance to marine mammals from seismic surveys is mandatory (see also section on habitats and species protection above). A report of the survey and marine mammal observations is submitted to the JNCC, detailing how the JNCC guidelines were implemented, the marine mammals sighted, the methods used to detect them and any problems encountered. Shallow gas (rig site) surveys are also subject to the consenting requirements for geophysical surveys, as is the testing of equipment to be used in offshore seismic and geophysical such surveys.

A3.1.2.9 Consent to locate facilities

The Consent to Locate provisions of Section 34 of *The Coast Protection Act 1949* were incorporated into the *Marine and Coastal Access Act 2009* (MCAA). The MCAA provided a regulatory framework for a new marine licensing regime that included consideration of works detrimental to navigation. Although

the MCAA licensing regime applies to a number of offshore oil and gas operations, including the disturbance of the seabed and the deposit and removal of substances or articles during the course of decommissioning operations. Section 77 of the MCAA excludes the vast majority of offshore oil and gas operations and carbon dioxide storage operations, which are already controlled under the *Petroleum Act 1998* or the *Energy Act 2008*. To maintain the Consent to Locate provisions for these excluded operations, Section 314 of the MCAA created a new Part 4A of the *Energy Act*, transferring the provisions of Section 34 of *The Coast Protection Act* to the *Energy Act* and transferring regulatory competence from Department for Transport to DECC. The issue of a Consent to Locate to an individual or organisation by the Secretary of State under Part 4A of the *Energy Act 2008* allows installation of the proposed offshore structure or operations providing they are undertaken in accordance with the consent conditions. It allows DECC to insist upon the provision of navigational markings that are considered appropriate for the proposed offshore structure or operations. Categories where a Consent to Locate is required are: permanent/fixed structures (e.g. well template, wellhead and Xmas tree); pipelines or cables (e.g. infield or export pipelines, water injection lines and control umbilicals) and other operations (e.g. the installation of surface moorings or buoys). The application process includes risk assessment and consultation. A consent is not required for mobile vessels, where operations do not constitute a potential navigational hazard, as there is no physical connection to subsea infrastructure/seabed and/or the vessels can move off location quickly in an emergency.

A3.1.2.10 Safety zones

When surface structures (fixed and floating installations) become operational, safety zones with a radius of 500m are automatically created under the *Petroleum Act 1987*. In the case of subsea facilities, application must be made to the Secretary of State requesting that a safety zone be established by Statutory Instrument.

A3.1.2.11 Authorisation to install and operate a pipeline

A Pipeline⁴ Works Authorisation is required under Part 3 of the *Petroleum Act 1998* for the construction and/or use of a submarine pipeline in territorial waters and on the continental shelf. Where a pipeline is to be laid within 12 nautical miles of the coast a Crown Estate Lease is also required.

A3.1.2.12 Deposits

Deposit of Materials Consent (DepCon) is required under the *Petroleum Act 1998* for deposit of materials, (e.g. rock or mattress placement for pipeline protection); this forms part of the Pipeline Works Authorisation (PWA) application process. A Direction under the *Offshore Petroleum Production and Pipelines (Assessment of Environmental Effects) Regulations 1999* (as amended) is also required. A licence under the MCAA or *Marine (Scotland) Act 2010* is required in cases where not covered by a Pipeline Works Authorisation, for example: pipeline preparatory works before an Authorisation or Direction is in place, and installation of certain types of cables, e.g. communication cables.

The deposits related to drilling, pipeline, production and intervention operations, e.g. stabilisation or protection materials, such as jack-up rig stabilisation/anti-scour deposits, or pipeline protection/free-span correction must be subject of a direction under the *Offshore Petroleum Production and Pipelines (Assessment of Environmental Effects) Regulations 1999* (as amended) and applied through the DECC's Portal via a DEP EIA SAT.

Deposits relating to decommissioning or abandonment operations require a MCAA licence.

⁴ Pipeline defined in the *Petroleum Act 1998*, and modified in the *Energy Act 2008* as, "a pipe or system of pipes (excluding a drain or sewer) for the conveyance of any thing, together with all apparatus, works and services associated with the operation of such a pipe or system".

A3.1.2.13 Use and discharge of chemicals

The *Offshore Chemicals Regulations 2002* (as amended) (the Chemical Regulations) implement OSPAR Decision 2000/2 on a Harmonised Mandatory Control System for the Use and Reduction of the Discharge of Offshore Chemicals (as amended) in the UK.

Under the Chemical Regulations (as amended) the use or discharge of offshore chemicals (e.g. for drilling, production etc.) is prohibited except in accordance with the terms of, and conditions attached to, a permit issued under the Regulations. CEFAS pre-screen and rank the chemicals in accordance with the OSPAR Decision and only chemicals that have been notified to and assessed by CEFAS, and included in the current list of notified chemicals may be used. Chemicals are ranked by hazard, based on a PEC:PNEC (Predicted Effect Concentration: Predicted No Effect Concentration) approach. Each permit application must include a risk assessment of the potential environmental impact on the marine environment of the relevant chemical in the specific mode of use and/or discharge. Any proposed change in use or discharge from that described in the permit must have prior approval by variation of the permit. Chemical use and discharge must be reported.

The Chemical Regulations (as amended) also prohibit releases of chemicals (or any of its degradation or transformation products) other than by way of a permitted discharge. Operators are required to report all chemical spills, regardless of size to the Coastguard, DECC and other relevant authorities (Petroleum Operations Notice No.1, PON1).

No organic phase drilling fluids may be used without prior authorisation (i.e. through the MAT and SAT process), and discharge of cuttings to sea with a concentration >1% by weight of oil on dry cuttings is prohibited. (OSPAR Decision 2000/3 on the Use of Organic-Phase Drilling Fluids (OPF) and the Discharge of OPF-Contaminated Cuttings). Such OPF cuttings are reinjected to deep rock strata or shipped to shore for treatment/oil recovery and disposal at licensed sites.

The *REACH Enforcement Regulations 2008* (as amended) provide for the enforcement of the EU REACH Regulation (as amended) in the UK, including on all offshore installations (not including ships) in UK territorial waters and the Continental Shelf. REACH is an EU Regulation (EC 1907/2006) which entered into force in June 2007 and deals with the Registration, Evaluation, Authorisation and Restriction of Chemical Substances. This introduces new registration requirement covering all substances supplied above 1 tonne per year and new authorization requirement covering substances of high concern. It transfers the responsibility for gathering data and carrying out initial risk assessments to the industry. Although most of the provisions of REACH cover manufacturers and importers of chemicals, downstream users (e.g. oil and gas operators) are obliged to implement risk reduction measures recommended by their chemical suppliers and under certain circumstances they may be obliged to conduct a risk assessment covering their particular use(s) of a chemical.

A3.1.2.14 Consent for produced water discharges containing reservoir fluids

The *Offshore Petroleum Activities (Oil Pollution Prevention and Control) Regulations 2005* (as amended) introduced a system of permits for oil discharges which replaced the exemptions under the Prevention of Oil Pollution Act 1971 and gave more wide-ranging powers to inspectors. The Regulations were amended to extend them to the offshore storage of combustible gas, the offshore unloading of combustible gas to an installation and the offshore storage of carbon dioxide. A Permit is required for any discharge of reservoir oil, via the relevant MAT and SAT applications and Operators are required to make regular reports of oil discharged.

The Regulations are a mechanism to continue implementation on the UKCS of OSPAR Recommendations (e.g. OSPAR Recommendation 2001/1 for the management of produced water from offshore installations (as amended) and OSPAR Recommendation 2012/5 for a risk-based approach to the Management of Produced Water Discharges from Offshore Installations)

A3.1.2.15 Machinery space drainage

The *Merchant Shipping (Prevention of Oil Pollution) Regulations 1996* (as amended) give effect to Annex I of MARPOL 73/78 (prevention of oil pollution) in UK waters. They address oily drainage from

machinery spaces on vessels and installations. The North Sea is designated a “Special Area”, within which the limit for oil in discharged water from these sources is 15ppm. For mobile drilling units, discharges of processed bilge water from machinery spaces should only be undertaken when there is a positive water movement past the rig, i.e. at times of the day when the tidal flow is at its greatest, and provided there is no visible sheen. Vessels and installations are required to hold a valid UKOPP (UK Oil Pollution Prevention) or IOPP (International Oil Pollution Prevention) Certificate. Vessels and drilling rigs are also required to hold a current, approved Shipboard Oil Pollution Emergency Plan (SOPEP) which is in accordance with guidelines issued by the Marine Environment Protection Committee of the International Maritime Organisation.

The *Merchant Shipping (Implementation of Ship-Source Pollution Directive) Regulations 2009* implemented EU Directive 2005/35/EC on ship-source pollution and introduced penalties for infringements and make various amendments to the above Regulations with respect to defences.

A3.1.2.16 Sewage

The *Merchant Shipping (Prevention of Pollution by Sewage and Garbage from Ships) Regulations 2008* (as amended) implement the revised Annex IV of MARPOL 73/78 (Regulations for the Prevention of Pollution by Sewage from Ships). Sewage equipment is required by vessels of >400 GRT or <400 GRT if certified to carry more than 15 persons including mobile drilling units or other vessels (e.g. FPSO) on international voyage. Sewage discharge (from applicable ships) is prohibited within 3 miles of land; if appropriate sewage treatment plant is on board, discharge may occur if > 3 miles from land; if there are no treatment facilities, sewage may only be discharged if > 12 miles from land.

A3.1.2.17 Waste

The *Merchant Shipping (Prevention of Pollution by Sewage and Garbage from Ships) Regulations 2008* (as amended) implement Annex V of MARPOL 73/78 (Regulations for the Prevention of Pollution by Garbage from Ships – revised Annex V entered into force in 2013). Annex V, which applies to fixed and floating offshore installations (including rigs) and their support vessels operating on the UKCS, prohibits the discharge of all garbage into the sea (except ground food wastes where the installation is more than 12 miles from the nearest land), requires facilities/ships to have a waste (garbage) management plan and display placards to notify all persons on board that the over-board disposal of waste is prohibited, and to maintain waste records. Because the offshore disposal of garbage is prohibited, then all such waste must be transferred to shore for disposal and must therefore be managed in accordance with the Duty of Care for waste and the requirements of all relevant UK waste legislation. There are strict controls on the trans-frontier shipment of waste and the export of waste for disposal is prohibited.

Petroleum Operations Notice No. 2 (PON2) covers the loss or dumping of materials at sea from offshore oil and gas installations. No material should be intentionally discarded at sea, except material that is legally deposited in accordance with the requirements of relevant legislation or deposited under conditions of force majeure. The latter is only relevant if the dumping is necessary to secure the safety of the vessel, installation or crew. Every reasonable attempt should be made to recover items lost overboard. All loss or unregulated dumping of solid materials at sea from offshore oil and gas installations must be reported through a PON2 form.

A3.1.2.18 Consent to flare or vent any gas

Consent from the Secretary of State is required to flare or vent gas (*Energy Act 1976*, petroleum licences granted under the *Petroleum (Production) Act 1934* and the *Petroleum Act 1998*). Guidance to operators states that they should seek to minimise flaring and venting “by implementing best practice at an early stage in the design of the development and by continuing to improve on this during the subsequent operational phase. The operator should consider carefully all operational activities in accordance with good oil field practices taking into consideration plant uptime, efficient processing, handling, uses and transportation of gas.”

A3.1.2.19 Combustion emissions from power generation etc.

The Offshore Combustion Installations (Pollution, Prevention & Control) Regulations 2013 (PPC) transposes the relevant provisions of the Industrial Emissions Directive in respect to specific atmospheric pollutants from combustion installations (with a thermal capacity rating $\geq 50\text{MW}$) on offshore platforms undertaking activities involving oil and gas production and gas and carbon dioxide unloading and storage. PPC Permit conditions include provisions based on best available techniques, emission limits, and monitoring requirements.

A3.1.2.20 Emissions trading

The Greenhouse Gas Emissions Trading Scheme Regulations 2012 (as amended), came into force in January 2013 and consolidate, with amendments, and replace previous sets of implementing regulations (S.I. 2005/925 and S.I. 2010/1996). They transpose and implement within the UK, Directive 2003/87/EC establishing a scheme for greenhouse gas emission allowance trading, and the amendments made by Directive 2009/29/EC, which improve and extend the scheme. Combustion installations $>20\text{ MW}(\text{th})$ input require a permit to discharge CO_2 and the permit holder to surrender purchased allowances to cover the emissions. The trading scheme is now in its 3rd Phase, which runs from 2013 to 2020.

A3.1.2.21 Ozone depleting substances

The Ozone Depleting Substances (ODS) Regulation (EC) No. 1005 / 2009 (“the EU ODS Regulation”) prohibits and controls the production/use of ozone depleting substances thereby reducing atmospheric emissions of these substances; in particular, the EU ODS Regulation concerns the control of emissions from refrigeration systems, air-conditioning units, fire-protection systems and heat pumps. In September 2010, Commission Regulation (EU) No. 744 / 2010 which replaces Annex VI to the EU ODS Regulation entered into force and sets out the permitted critical uses of halons as well as the timeframes for their phasing out. Under the revised Annex VI, for oil and gas facilities the critical use exemptions for halons applied to new fire-protection systems until 31 December 2010 and will apply to fire-protection systems that existed prior to 31 December 2010 until 31 December 2020. The *Ozone-Depleting Substances Regulations 2015* cover offshore installations involved in oil/gas, Carbon Capture and Storage (CCS) and gas unloading/storage activities) and set out the provisions for the enforcement of the EU ODS Regulation.

A3.1.2.22 Fluorinated Greenhouse Gases

The Fluorinated Greenhouse Gases Regulations 2015 implement the requirements in the UK of the Regulation (EU) No 517/2014 of the European Parliament, in order to reduce emissions of fluorinated greenhouse gases (F Gases), used predominantly in the refrigeration and air conditioning sectors and which make a significant contribution to climate change. The Fluorinated Greenhouse Gases Regulations cover certification of equipment such as refrigeration and fire protection and fluorinated gas (f-gas) based solvent as well as creating offences and penalties for not complying with recovery of f-gases legislation, labelling, qualifications and certificates required to work with products or equipment containing them. The EU Regulation also includes changes to criteria for leak checking F Gas containing equipment (now based on global warming potential rather than weight).

A3.1.2.23 Energy Savings Opportunity Scheme Regulations (ESOS) 2014

The *Energy Savings Opportunity Scheme Regulations (ESOS) 2014* was introduced to implement Article 8 of the Energy Efficiency Directive 2012/27/EU. ESOS is a mandatory energy assessment and energy saving identification scheme and is applicable to the offshore oil and gas industry sector. The scheme requires an audit to be undertaken once every four years to identify cost-effective energy efficiency measures. Compliance for the first four-year period (Phase 1) was due in December 2015 and is notified through an online notification system facilitated by the Environment Agency.

A3.1.2.24 Air pollution from ships

The Merchant Shipping (Prevention of Air Pollution from Ships) Regulations 2008 (as amended) implemented the 1997 Protocol for the establishment of International Regulations for the Prevention of Air Pollution from Ships which resulted in the addition of Annex VI (with revisions adopted in October

2008) to MARPOL 73/78. Annex VI comprises 19 Regulations and includes a Technical Code on the Control of Emissions of Nitrogen Oxides from Marine Diesel Engines (NO_x Technical Code). The North Sea was designated a SO_x Emission Control Area in 2005 where the sulphur content of fuel oil used onboard ships must not exceed 1.5% m/m; or ships must fit an exhaust gas cleaning system or use other technological methods to limit SO_x emissions.

The *Merchant Shipping (Prevention of Air Pollution from Ships) and Motor Fuel (Composition and Content) (Amendment) Regulations 2014* amended the 2008 Regulations to take into account of changes to the sulphur content of marine fuels required by *Council Directive 2012/33/EU as regards the sulphur content of marine fuels*. The main changes to the 2008 Regulations are:

- A reduction in the maximum sulphur content of fuel used in a sulphur oxide emission control area from 1.5% to 1.0% m/m, reducing to 0.1% from 1st January 2015 and
- A reduction in the maximum sulphur content of fuel not intended to be used in a sulphur oxide emission control area from 4.5% to 3.5% m/m from 1st January 2015 and reducing to 0.5% from 1st January 2020

The Regulations are applicable to relevant ships (over 400 gross tonnage) and fixed and floating platforms and drilling rigs.

A3.1.2.25 Radioactive substances

Onshore and offshore storage and disposal of naturally occurring radioactive materials (NORM) and the use, storage and disposal of radioactive sources is regulated under the *Radioactive Substances Act 1993* (as amended) in Scotland. In England and Wales radioactive substance regulation is included in the Environmental Permitting regime introduced by the *Environmental Permitting (England and Wales) Regulations 2010* (as amended).

A3.1.2.26 Decommissioning

Under the *Petroleum Act 1998* (as amended), operators proposing to decommission an installation must submit a Decommissioning Programme to DECC for approval prior to any works being commenced. The decommissioning programme is supported by an EIA. Consultation and monitoring is also required. There is a presumption that offshore installations will be re-used, recycled or disposed of on land and that any exceptions to that general rule will be assessed individually in accordance with the provisions of OSPAR Decision 98/3. The *Energy Act 2008* amends the *Petroleum Act 1998* to ensure that the provisions of which relate to the decommissioning of offshore installations including for example, obligations to remove the facilities completely after the permanent cessation of operations apply to all installations used for the offshore storage and offloading of combustible gas and those used for carbon dioxide storage.

A3.1.2.27 Spill contingency planning

In June 2013 the *EU Directive 2013/30/EU on the safety of offshore oil and gas operations (The Offshore Safety Directive)* (OSD) was published and this requires that certain specified information regarding emergency response measures is provided in an Internal Emergency Response Plan (IERP) which itself forms part of the Report on Major Hazards (Safety Case). In order to deliver the requirements of the OPRC Convention and elements of the IERP required by OSD, the *Merchant Shipping (Oil Pollution Preparedness, Response and Cooperation Convention) Regulations, 1998* (the OPRC Regulations) were amended such that the new requirements introduced by the OSD apply UK offshore oil and gas operations. The *Merchant Shipping (Oil Pollution Preparedness, Response and Co-operation Convention) (Amendment) Regulations 2015*, came into force in July 2015.

Operators of offshore oil and gas operations must have a formally approved Oil Pollution Emergency Plan (OPEP) in place for each offshore installation and oil handling facility (e.g. pipelines) (or by agreement group of facilities/installations). The OPEP is submitted and managed by the Installation Operator (for installations), Well Operator (for wells) and Owner of the Non Production Installation

(e.g. drilling rigs). The plan must include an assessment of spill risk, response arrangements, and details of actions, interfaces, training and exercises as required by the Regulations.

Operators are required to report all oil and chemical spills, regardless of size to the Coastguard, DECC and other relevant authorities (Petroleum Operations Notice No.1, PON1).