

Appendix 2: Other Potentially Relevant Initiatives

A2.1 Introduction

The Environmental Assessment of Plans and Programmes Regulations 2004 require that within a SEA Environmental Report consideration is given to:

“an outline of the contents and main objectives of the plan or programme, and of its relationship with other relevant plans and programmes” and that consideration is given to the degree to which the “plan or programme influences other plans and programmes including those in a hierarchy”

“the environmental protection objectives, established at international, Community or Member State level, which are relevant to the plan or programme and the way those objectives and any environmental considerations have been taken into account during its preparation”.

The following sections outline the main objectives/requirements of a range of other initiatives (including plans and programmes) established at international, European Union, UK and UK constituent country level, which are relevant to this plan/programme. These initiatives are arranged by SEA topic as used in Appendix 1 Environmental Baseline.

Where legislation is listed, these are the most pertinent acts/bills/regulations etc. and should not be regarded as a part of a definitive list. Many pieces of legislation or other initiatives are relevant to some or all of the topic areas, and therefore may be replicated in several topic tables or discussions.

A2.2 Biodiversity, habitats, flora & fauna (including conservation)

Biodiversity, Habitats, Flora & Fauna	
International	<p>Convention on International Trade in Endangered Species of Wild Fauna and Flora (1973) Ramsar Convention on Wetlands of International Importance especially as Waterfowl Habitat (1971, 1982) Agreement on the Conservation of African-Eurasian Migratory Waterbirds (1999) United Nations Convention on Biodiversity (the Rio Convention, 1992) Convention on the Conservation of Migratory Species of Wild Animals (the Bonn Convention, 1979) The International Council for the Exploration of the Sea (ICES) Code of Practice for the Introduction and Transfer of Marine Organisms International Convention for the control of ships ballast water and sediments ((adopted 2004, ratified in 30 States in 2005) Strategic Plan for Biodiversity 2011-2020 (UNEP/CBD/COP/DEC/X/2) and the Aichi Biodiversity Targets (UNEP/CBD/COP/10/9)</p>
Regional	<p>Convention for the Protection of the Marine Environment of the North East Atlantic (the OSPAR Convention, 1992) OSPAR Recommendation 2003/3 on a Network of Marine Protected Areas, and OSPAR Recommendation 2010/2 on amending Recommendation 2003/3 on a network of Marine Protected Areas OSPAR Agreement 2005-6 on the Agreement on Background Concentrations for Contaminants in Seawater, Biota and Sediment OSPAR List of Threatened and/or Declining Species and Habitats. Convention on the Conservation of European Wildlife and Natural Habitats (the Bern Convention, 1979) Agreement on the Conservation of Small Cetaceans of the Baltic North East Atlantic, Irish and North Seas (1994) Convention for the Conservation of Salmon in the North Atlantic Ocean (1983) Council of Europe Strategy on Invasive Alien Species (2003) OSPAR Quality Status Report 2010</p>
Europe	<p>Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora Directive 2009/147/EC on the Conservation of Wild Birds Directive 2004/35/EC on environmental liability (and amendments through 2006/21/EC, 2009/31/EC and 2013/30/EU) The WFD with respect to achieving good ecological status in transitional and coastal waters. Marine Strategy Framework Directive 2008/56/EC Council of Europe Strategy on Invasive Alien Species (2003) EU Biodiversity Communication (2006) Action Plan: Halting the loss of biodiversity by 2010 and beyond (2006) Proposal for the seventh EU Environment Action Programme to 2020, "Living well, within the limits of our planet". (adopted 2013) Our life insurance, our natural capital: an EU biodiversity strategy to 2020 (2011) Council Regulation (EC) No 1100/2007 establishing measures for the recovery of the stock of European eel Regulation (EU) No 1143/2014 of the European Parliament and of the Council on the prevention and management of the introduction and spread of invasive alien species</p>
UK	<p><i>National Parks and Access to the Countryside Act 1949</i> <i>The Wildlife and Countryside Act 1981</i> (as amended - note there are a number of amending Regulations specific to devolved administrations) <i>Natural Environment and Rural Communities Act 2006</i> <i>The Offshore Marine Conservation (Natural Habitats &c.) Regulations 2007</i> (as amended) <i>The Offshore Petroleum Activities (Conservation of Habitats) Regulations 2001</i> (as amended) <i>The Conservation of Habitats and Species Regulations 2010</i> <i>Marine and Coastal Access Act 2009</i> <i>The Marine Strategy Regulations 2010</i> (as amended) Safeguarding our Seas: A strategy for the conservation and sustainable development of our marine environment (2002) Review of Marine Nature Conservation (Defra 1999 onwards) and response, Safeguarding Sea Life (2005) Our Seas - a shared resource. High Level Marine Objectives (2009) Charting Progress 2 - An Assessment of the State of UK Seas (2010) Marine Policy Statement (2011) UK Government Sustainable Development Strategy: Securing the Future (2005) Mainstreaming sustainable development: The Government's vision and what this means in practice (2011) and progress reporting (2013) UK National Ecosystem Assessment (2011) and follow on (2014)</p>

UK

Marine Strategy Part 1: UK Initial Assessment and Good Environmental Status (2012)
 Marine Strategy Part 2: UK Marine Monitoring Programmes (2014)
 Marine Strategy Part 3: UK Programme of Measures (2015)
 The UK Post-2010 Biodiversity Framework (2012)
 The Great Britain Invasive Non-native Species Strategy (2015)
 Habitats Directive Implementation Review (2012-2013) and the work of the Marine Evidence Group (established 2012)
 NERC Marine Environmental Mapping Programme (MAREMAP)

Local

Countryside and Rights of Way Act 2000 - England and Wales
The Eels (England and Wales) Regulations 2009
The Conservation of Habitats and Species Regulations 2010 (as amended) - England and Wales
 National Policy Statements for Energy (2011): - England and Wales
 Overarching National Policy Statement for Energy (EN-1)
 National Policy Statement for Renewable Energy Infrastructure (EN-3)
 National Policy Statement for Gas Supply Infrastructure and Gas and Oil Pipelines (EN-4)
 The National Planning Policy Framework (2012) - England
 East Inshore and Offshore Marine Plans (2014) - England
 South Inshore and Offshore Marine Plans (ongoing) - England
 Biodiversity 2020: A strategy for England's wildlife and ecosystem services (2011) and progress update (2013)
 The Natural Environment White Paper. The natural choice: securing the value of nature (2011) and implementation updates (2011-2014) - England
 The Marine Conservation Zone Project - England
 UK National Ecosystem Assessment (2011) and follow on (2014)
 Marine Aggregate Levy Sustainability Fund (MALSF) Regional Environmental Characterisations including : South Coast, Thames, East Coast and the Humber areas.

Environment (Wales) Bill
 The Natural Resources Policy Statement (2015) - Wales
 Technical Advice Note 5: Nature Conservation and Planning 2013 - Wales
 Planning Policy Wales Edition 7 (2014)
 Wales Biodiversity Framework (2010)
 Environment Strategy for Wales (2006) and annual progress reporting (2012)
 One Wales, One Planet: Sustainable Development Scheme of the Welsh Assembly Government (2009)
 The Living Wales Programme (2010-2013)
 Sustainable development for Welsh seas: Our approach to marine planning in Wales (2011)
 Welsh National Marine Plan (ongoing)
 Marine Conservation Zone Project Wales (ongoing)

The Conservation (Natural Habitats, &c.) Regulations 1994 (as amended) - Scotland
Nature Conservation (Scotland) Act 2004
The Environmental Liability (Scotland) Regulations 2009 (as amended)
Marine (Scotland) Act 2010
 Planning Series Circular 6/2013: Development Planning (2013) - Scotland
 Scottish Planning Policy (2014) and the National Planning Framework for Scotland 3 (2014)
 Scotland's National Marine Plan (2015)
 A Follow up to Seas the Opportunity: A Strategy for the Long Term Sustainability of Scotland's Coasts and Seas (2007)
 Scotland's Biodiversity: It's In Your Hands (2004) and 2020 Challenge for Scotland's Biodiversity (2013)
 The Scottish MPA Project (ongoing)

Nature Conservation and Amenity Lands (Northern Ireland) Order 1985
Wildlife (Northern Ireland) Order 1985
Conservation (Natural Habitats, etc.) Regulations (Northern Ireland) 1995 (as amended)
The Environmental Liability (Prevention and Remediation) Regulations (Northern Ireland) 2009 (as amended)
Marine Act (Northern Ireland) 2013
 Planning Policy Statement 2: Natural Heritage (2013) - Northern Ireland
 Strategic Planning Policy Statement For Northern Ireland (2015)
 Northern Ireland Biodiversity Strategy (2002)
 Strategy for Marine Protected Areas in the Northern Ireland inshore region (2014)
 MCZ Project Northern Ireland (ongoing)
 The Marine Plan for Northern Ireland (ongoing)

A2.2.1 Key Objectives and Targets

Article 3 of the Habitats Directive 92/43/EEC provides for the creation of a coherent ecological network of European sites (Natura 2000) made up of Special Areas of Conservation (SACs), which are set up to conserve those species listed in Annex I and habitats listed in Annex II of the directive; and those sites designated as Special Protection Areas (SPAs) for bird species under Annex I (rare or vulnerable) and II (migratory) of the Wild Birds Directive 2009/147/EC.

The Conservation of Species and Habitats Regulations 2010 consolidates the Conservation (Natural Habitats, &c.) Regulations 1994 in England and Wales, and also implements certain aspects of the *Marine and Coastal Access Act 2009*, principally the transfer of certain licensing functions from Natural England to the Marine Management Organisation (MMO), and the recognition of Marine Enforcement Officers to be able to use powers under the *Marine and Coastal Access Act 2009* and to enforce offences under the Habitats Regulations, within England, Wales and Scotland (for reserved matters) and their respective territorial seas. Devolved administrations implement the Habitats Directive through *The Conservation (Natural Habitats, &c.) Regulations 1994 (as amended)* in Scotland, and *The Conservation (Natural Habitats, etc.) Regulations (Northern Ireland) 1995 (as amended)* in Northern Ireland. The Wild Birds Directive is also implemented through the above Regulations, and also through the *Wildlife & Countryside Act 1981 (as amended)*, the *Wildlife (Northern Ireland) Order 1985* and the *Nature Conservation and Amenity Lands (Northern Ireland) Order 1985 (as amended)*. *The Offshore Marine Conservation (Natural Habitats, &c.) Regulations 2007 (as amended)* apply the Habitats Directive and the Birds Directive beyond territorial waters (beyond 12nm). These Regulations together provide for the designation and protection of European sites and the protection of European Species in the UK and UK waters. It should be noted that modification to the 2007 Regulations by the *Energy Act 2008 (Consequential Modifications) (Offshore Environmental Protection) Order 2010* are such that *The Offshore Petroleum Activities (Conservation of Habitats) Regulations 2001* cover Habitats Regulations Assessment requirements of activities authorised under the *Petroleum Act 1998*, Part 1 of the *Energy Act 2008* (Gas Importation and Storage), or any Energy Act licence (e.g. oil and gas exploration and production, carbon dioxide appraisal and storage and gas storage, offshore pipelines).

Under *The Conservation of Species and Habitats Regulations 2010*, Regulation 35 (or 28 and 33 for the Northern Ireland and Scottish Regulations respectively) requires that the conservation bodies (e.g. Natural England, Joint Nature Conservation Committee (JNCC), Natural Resources Wales (NRW), SNH, Northern Ireland Environment Agency (NIEA)) produce advice on the conservation objectives for marine sites and activities likely to cause deterioration/disturbance to qualifying site habitats and/or species. Such advice has been previously produced by each body, and conservation advice packages are currently being reviewed or produced for a range of MPAs by Natural England under both Regulation 35 (Natura 2000) and the *Marine and Coastal Access Act 2009* (for Marine Conservation Zones, see below).

Following the publication of the Natural Environment White Paper, *The Natural Choice: securing the value of nature* (2011), a review was undertaken of the implementation of the Wild Habitats and Birds Directives, which identified four areas for change: Facilitating nationally significant infrastructure projects, improving implementation processes and streamlining guidance, improving the quality, quantity and sharing of data, and Improving the customer experience. A summary of measures was set out to achieve this (see page 4 of the Report of the Habitats and Wild Birds Directives Implementation Review), and progress was reported in 2013 which indicated that most of the measures listed in the review had been implemented. The white paper and review, like the National Planning Policy Framework, are consistent with the UK Government's wider approach to Sustainable Development¹.

The Wildlife and Countryside Act 1981 (as amended) is one of the principal pieces of legislation relating to nature conservation in Great Britain. Although protection under the Act generally includes adjacent territorial waters (12nm), for certain species protection is limited to 6nm from coastal baselines² due to the interaction with the Common Fisheries Policy and for the designation of Marine Nature Reserves out to 3nm. The Act is supplemented by various other pieces of legislation including the *Countryside and Rights of Way Act 2000* (in England and Wales) and the *Nature Conservation (Scotland) Act 2004* (in Scotland). In Northern Ireland, the main legislation is contained in the *Wildlife (Northern Ireland) Order 1985* (as amended) and *The Environment (Northern Ireland) Order 2002*. This legislation provides for the protection of species and the designation of nationally important sites known as Sites of Special Scientific Interest (SSSI) in England, Wales and Scotland and as Areas of Special Scientific Interest (ASSI) in Northern Ireland. Many SSSIs and ASSIs are also designated as European Sites. SSSI sites have until present extended only to Mean Low Water (e.g. intertidal areas), though the *Marine and Coastal Access Act 2009* (see below for further details) has allowed for all new SSSIs to extend below this line should features extend into the intertidal area.

The Environment (Wales) Bill was introduced in May 2015 and passed during a vote by the Welsh Assembly in February 2016, and is due to receive Royal Assent later in 2016. The bill covers a range of environmental issues including, most relevant to this SEA: sustainable management of natural resources, climate change, fisheries for shellfish and marine licensing, and flood and coastal erosion and land drainage. A number of reporting duties are placed on NRW including the preparation of a State of Natural Resources Report (SNRR) and Area Statements, which are to set out an assessment of natural resources and how well they are being managed, and the priorities, risks and opportunities for managing natural resources sustainably and what action they will take. The Welsh Government will produce a National Natural Resources Policy (NNRP) that sets out the priorities and opportunities for managing our natural resources sustainably, taking account of the SNRR and the extant Natural Resources Policy Statement.

Directive 2004/35/EC on environmental liability (and amendments through 2006/21/EC, 2009/31/EC and 2013/30/EU) with regard to the prevention and remedying of environmental damage (primarily transposed through the *Environmental Damage (Prevention and Remediation) Regulations 2015* – separate regulations apply in the devolved administrations) applies to environmental damage caused to *inter alia* species and habitats protected at the community level, i.e. those covered under the Birds and Habitats Directives. Amendments made via Directive 2013/30/EU on the safety of offshore oil and gas operations, makes these Regulations relevant to certain offshore activities.

¹ Mainstreaming Sustainable Development

² *The Territorial Sea (Baseline) Order 2014*

The Marine Strategy Framework Directive (MSFD, transposed by *The Marine Strategy Regulations 2010*) 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. Annex I of the MSFD contains eleven qualitative descriptors for determining GES. While they are relevant to a range of SEA topic areas, these are reproduced below as they are variously referred to in later sections:

- i. Biological diversity is maintained. The quality and occurrence of habitats and the distribution and abundance of species are in line with prevailing physiographic, geographic and climatic conditions.
- ii. Non-indigenous species introduced by human activities are at levels that do not adversely alter the ecosystems.
- iii. Populations of all commercially exploited fish and shellfish are within safe biological limits, exhibiting a population age and size distribution that is indicative of a healthy stock.
- iv. All elements of the marine food webs, to the extent that they are known, occur at normal abundance and diversity and levels capable of ensuring the long-term abundance of the species and the retention of their full reproductive capacity.
- v. Human-induced eutrophication is minimised, especially adverse effects thereof, such as losses in biodiversity, ecosystem degradation, harmful algae blooms and oxygen deficiency in bottom waters.
- vi. Sea-floor integrity is at a level that ensures that the structure and functions of the ecosystems are safeguarded and benthic ecosystems, in particular, are not adversely affected.
- vii. Permanent alteration of hydrographical conditions does not adversely affect marine ecosystems.
- viii. Concentrations of contaminants are at levels not giving rise to pollution effects.
- ix. Contaminants in fish and other seafood for human consumption do not exceed levels established by Community legislation or other relevant standards.
- x. Properties and quantities of marine litter do not cause harm to the coastal and marine environment.
- xi. Introduction of energy, including underwater noise, is at levels that do not adversely affect the marine environment.

As part of the implementation of the MSFD, the UK Government released Marine Strategy Part 1: UK Initial Assessment and Good Environmental Status (2012). The report includes an initial assessment of UK seas, primarily derived from work undertaken for Charting Progress 2, an outline of the characteristics of GES for each MSFD descriptor as defined for the UK, and targets and indicators which may be used to achieve and monitor progress towards GES. The Marine Strategy Part 2, published in 2014, provides a description of the UK's marine monitoring programmes to support the targets and indicators set out for each of the eleven MSFD descriptors, and the UK's proposed programme of measures to maintain or achieve GES was subject to consultation in early 2015.

Included in MSFD measures to achieve GES is the establishment of a cohesive network of Marine Protected Areas which is intended to build on the areas already protected as European marine sites under the Birds and Habitats Directives. Sites established under The *Marine and Coastal Access Act 2009*, and Acts of the devolved administrations, will aid the completion of such a network of MPAs, which is also a requirement of other commitments regarding MPAs under international conventions such as the Convention on Biological Diversity. These sites which may be designated both within territorial and offshore waters are known as Marine Conservation Zones (MCZs) in England, Wales and Northern Ireland, and Marine Protected Areas (MPAs) in Scotland, administered at the local level in each UK constituent country.

The MCZ project in England and Wales was initially delivered through four regional projects administered by Natural England and the JNCC, covering the South-West (Finding Sanctuary), Irish Sea (Irish Sea Conservation Zones), North Sea (Net Gain) and Eastern Channel (Balanced Seas). The sites were selected based on representative habitat and species features (termed Features of Conservation Importance, FOCI), subject to consultation with a range of relevant stakeholders, and to several rounds of consideration by the Science Advisory Panel (SAP) prior to recommended sites being submitted in 2011. The result was the identification of 127 recommended MCZs and Reference Areas (sites within which strict environmental protection measures essentially made then had constraints of activities). Formal advice was then given to Government in July 2012 by JNCC and Natural England, with 27 sites being designated in 2013 following consultation. Some sites were not designated in this first tranche due to a lack of robust evidence to support the presence or nature of certain FOCI, or their potential impact on activities such as renewable energy cable landfall. Subsequently, an additional 23 sites were proposed in a second tranche consultation in 2015 (expected to be finalised in 2016), with additional features proposed for 10 of the sites designated in the first tranche. A number of other sites (e.g. Compass Rose, Celtic Deep) were withheld based on evidence limitations. A third tranche of designations is expected to be consulted on in 2016. The location of these sites and the features for which they have been selected are mapped and described in the OESEA3 Environmental Report.

Scottish territorial and offshore waters, and the territorial waters of Wales and Northern Ireland, are subject to their own programmes of MCZ/MPA identification and designation. In Wales, the Welsh Assembly Government (WAG) is running the Wales MCZ Project, which is advised by a Steering Group and a Technical Advisory Group. The former consists of WAG, NRW, the Welsh Local Government Association and other relevant bodies in Wales, with the latter having a broader array of advisers including the JNCC and Centre for Environment, Fisheries and Aquaculture Science (Cefas). The Welsh Assembly Government intends to use the new MCZ powers to supplement the existing network of marine protected areas (e.g. offshore SACs) with a limited number of highly protected sites. A consultation on 10 proposed sites was undertaken in 2012, however none of the proposed sites have yet been put forward for designation. In UK offshore waters adjacent to Scotland, MPAs are being identified through a Scottish Marine Protected Area Project under the *Marine and Coastal Access Act 2009*, with those in Scottish Territorial Waters through the *Marine (Scotland) Act 2010*. The Scottish MPA project identified proposals for 33 MPAs and 4 MPA search locations yet to be fully assessed which were consulted on in 2013. 30 of the sites were designated in 2014 under Marine Protected Area Orders. The location of these sites and the features for which they have been selected are mapped and described in the OESEA3 Environmental Report.

The Department of Environment (Northern Ireland) published, *A draft Strategy for Marine Protected Areas in the Northern Ireland Inshore Region*, for consultation in May 2013. The strategy outlines the approach in Northern Ireland to the creation of MCZs in their territorial waters, which will be designated under the *Marine Act (Northern Ireland) 2013*. Strangford Lough was the first MCZ in Northern Ireland, replacing its former designation as a Marine

Nature Reserve under the *Nature Conservation and Amenity Lands (Northern Ireland) Order 1985*. Consultation opened on the proposed MCZs in December 2015, and is due to close on 11th March 2016.

The High Level Marine Objectives agreed by the UK Government and Devolved Administrations set out an approach to the sustainable use of UK seas, including the recognition that healthy marine habitats and ecosystems, species and biodiversity should be maintained and where appropriate recovered. These objectives underpin the Marine Policy Statement (MPS), and the next stage of marine planning (regional Marine Plans) is presently underway, with the first two plans (East Inshore and East Offshore) adopted in 2014, and the second set (South Inshore and South Offshore) presently underway. These plans are to implement policies consistent with the MPS while considering individual regional characteristics.

A number of potential impacts on the natural environment from energy developments relevant to OESEA3 are identified in the MPS. More widely and in relation to all marine activities, high level environmental considerations are provided by reaffirming the conservation responsibilities of the UK Government which are to be taken account of in the preparation of Marine Plans (presently ongoing). This includes the commitment to establishing a UK network of MPAs incorporating the new MCZ designation under the *Marine and Coastal Access Act 2009* (see above) and existing and future marine sites including SACs and SPAs.

Northern Ireland are to develop their own National marine plan under the *Marine and Coastal Access Act 2009* for offshore waters, with inshore marine planning to be covered by the *Marine Act (Northern Ireland) 2013*. Other devolved administrations have similarly published (Scotland's National Marine Plan, 2015) or are drafting (Welsh National Marine Plan) their own National plans.

To date the vast majority of designated conservation sites in the UK have been terrestrial or terrestrial with marine components, with very few being entirely marine in nature. More recently a number of offshore sites have been designated as a Site of Community Importance (SCIs) (e.g. Dogger Bank), with others in the process of being designated (e.g. Hatton Bank cSAC), and work is underway to identify and extend a number of marine SPAs (e.g. Flamborough and Filey Coast pSPA, range of draft SPAs in Scottish territorial waters). These sites, and those sites to arise from the designation of MCZs and Scottish MPAs, provide the basis for extending the network of national and European sites into offshore waters and the creation of an ecologically coherent network in the marine environment.

The UK Biodiversity Action Plan (UKBAP) provides a national strategy for the conservation of biological diversity and the sustainable use of biological resources as required under Article 6 of the Rio Convention. A number of species (1,150) and habitats (65) have been identified as being priorities for conservation action in the UK, and these include a number of marine components, for instance 28 BAP habitats are marine. Though the plans for these species and habitats have no statutory status, they are given some legal basis in the *Countryside and Rights of Way Act 2000* and the *Natural Environment and Rural Communities Act 2006* (e.g. list of species of principal importance designated under Sections 41 and 42 of the Act).

In 2010 the EU published guidance on the development of wind farms in accordance with EU nature legislation, specifically Natura 2000 aimed at (including others) planners, developers and consultants. In addition to planning guidance and policy background, the document identifies potential impacts arising from both onshore and offshore wind farms on birds, bats and aquatic species (e.g. cetaceans), and how strategic planning can help to avoid or minimise environmental conflicts.

Additionally, study programmes to support regional assessments of long-term effects of oil and gas developments (on behalf of Oil and Gas UK and the UK Government/Industry Environmental Monitoring Committee); and studies to support assessment and monitoring of specific offshore or nearshore energy projects (e.g. those associated with the SeaGen development in Strangford Lough, monitoring of offshore wind under (formerly) FEPA and marine licence conditions) have also contributed to knowledge in this topic area.

National Policy Statements were published in 2011 and were aimed at providing a policy steer for Nationally Significant Infrastructure Projects (NSIPs) as detailed in the *Planning Act 2008*. Those which are of close relevance to OESEA3 are:

- Overarching National Policy Statement for Energy (EN-1)
- National Policy Statement for Renewable Energy Infrastructure (EN-3)
- National Policy Statement for Gas Supply Infrastructure and Gas and Oil Pipelines (EN-4)

Each National Policy Statement was subject to an Appraisal of Sustainability (AoS) incorporating Strategic Environmental Assessment and Habitats Regulations Assessment (HRA). The Overarching National Policy Statement for Energy (EN-1) contains policy in relation to, amongst other considerations, generic biodiversity impacts; whereas the energy specific policy statements contain more detailed considerations, although still at a high policy level. Each National Policy Statement contains considerations relevant to potential impacts on the natural environment, including that within the remit of the plan/programme, such as birds, marine mammals, fish and intertidal habitats. Decisions made by the relevant authority with regards to NSIPs must also be taken with regard to the MPS and any relevant Marine Plan.

In addition to threats posed from marine development and climate change, the marine environment has recently been subject to a number of introduced species which have led to a series of localised changes in community composition. The introduction of alien non-native species is considered one of the greatest threats to loss to biodiversity, can cause economic and ecological damage (Cook *et al.* 2013), and may be accentuated by predicted climate change. A number of national and international initiatives exist aiming to recommend and introduce safeguards to limit the transport of invasive species, including the GloBallast Partnership Programme and the Invasive Non-native Species Strategy for Great Britain (currently under review).

A2.2.2 Implications for SEA

The SEA considers the implications of the plan/programme and its alternatives in relation to the current location of nationally and internationally important sites and the species, or habitats for which they are designated, and any sites which are currently being considered for designation. Additionally, the SEA considers the wider UKCS baseline based on presently available evidence, establish its trajectory, any environment issues, and information gaps. The SEA considers the potential implications of the plan/programme on attaining good ecological/environmental status of both marine and coastal/estuarine waters under the Water Framework Directive (WFD) and MSFD, in the context of the wider range of legislative and other measures in place or available to help avoid any likely significant effects.

A2.3 Geology, Substrates and Coastal Processes

Geology, Substrates & Coastal Processes	
International	<p>The Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter 1972 (the London Convention) and 1996 Protocol Thereto (amendment on the storage of CO₂ in geological formations came into force 10 February 2007).</p>
Regional	<p>OSPAR Recommendation 2003/3 on a Network of Marine Protected Areas OSPAR Agreement 2005-6 on the Agreement on Background Concentrations for Contaminants in Seawater, Biota and Sediment OSPAR Recommendation 2006/5 on a management regime for offshore cuttings piles OSPAR Decision 2007/2 on the Storage of Carbon Dioxide Streams in Geological Formations</p>
EU	<p>EC Habitats Directive 92/43/EEC (1992) Water Framework Directive 2000/60/EC (consolidated version) Directive 2007/60/EC on the assessment and management of flood risks Communication from the Commission Report to the European Parliament and the Council: An evaluation of Integrated Coastal Zone Management (ICZM) in Europe 2007. COM(2007)308 final Marine Strategy Framework Directive 2008/56/EC Directive 2009/31/EC of the European Parliament and of the Council of 23 April 2009 on the geological storage of carbon dioxide</p>
UK	<p><i>The Wildlife and Countryside Act 1981</i> <i>Offshore Marine Conservation (Natural Habitats, &c.) Regulations 2007</i> (as amended) <i>Marine and Coastal Access Act 2009</i> <i>The Marine Strategy Regulations 2010</i> <i>The Storage of Carbon Dioxide (Licensing etc.) Regulations 2010</i> <i>The Energy Act 2008 (Consequential Modifications) (Offshore Environmental Protection) Order 2010</i> <i>The Energy Act 2011</i> The UK Marine Policy Statement (2011) Geological Conservation Review (GCR) Local Geological Sites, including Regionally important Geological and Geomorphological Sites (RIGS) Marine Conservation Zones (and equivalent designations under the devolved administrations) Defra Consultation on Coastal Change Policy (2009), Coastal Change Pathfinder and Review (2012) National Coastal Erosion Risk Mapping Project (ongoing) CCS Roadmap: Supporting deployment of Carbon Capture and Storage in the UK (2012) - also see Next Steps in CCS: Policy Scoping Document (2015) - England and Wales The MCA Civil Hydrography Programme NERC Marine Environmental Mapping Programme (MAREMAP) Marine Strategy Part 1: UK Initial Assessment and Good Environmental Status (2012) Marine Strategy Part 2: UK Marine Monitoring Programmes (2014) Marine Strategy Part 3: UK Programme of Measures (2015) River Basin Management Plans for respective administrations, including those which are cross-border Flood Risk Management Plans in respective administrations</p>
Local	<p><i>Coast Protection Act 1949</i> (as amended) - England and Wales <i>Countryside and Rights of Way Act 2000</i> - England and Wales <i>The Water Environment (Water Framework Directive) (England and Wales) Regulations 2003</i> <i>The Conservation of Habitats and Species Regulations 2010</i> - England and Wales Marine Mineral Guidance Note 1: Guidance on the Extraction of Sand, Gravel and Other Minerals from the English Seabed (2002) National Policy Statements for Energy (2011): - England and Wales Overarching National Policy Statement for Energy (EN-1) National Policy Statement for Renewable Energy Infrastructure (EN-3) National Policy Statement for Gas Supply Infrastructure and Gas and Oil Pipelines (EN-4) National Planning Policy Framework (2012) - England</p>

East Inshore and Offshore Marine Plans (2014) - England
 South Inshore and Offshore Marine Plans (ongoing) - England
 A Strategy for Promoting an Integrated Approach to the Management of Coastal Areas in England
 Making space for water: Taking forward a new Government strategy for flood and coastal erosion risk management in England (2008)
 National flood and coastal erosion risk management strategy for England (2011)
 Shoreline Management Plans - England and Wales
 Marine Aggregate Levy Sustainability Fund (MALSF) Regional Environmental Characterisations including : South Coast, Thames, East Coast and the Humber areas.
 The Marine Conservation Zone Project - England (ongoing)

Making the Most of Wales' Coast. The Integrated Coastal Zone Management Strategy for Wales (2007) - under review as part of national marine planning for Wales (expected 2015)
 Technical Advice Note 5: Nature Conservation and Planning (2009) - Wales
 Technical Advice Note 14: Coastal Planning (1998) - Wales
 Technical Advice Note 15: Development and Flood Risk (2004) - Wales
 Minerals Planning Policy Wales (2001)
 Interim Marine Aggregates Dredging Policy (2004) - Wales
 Marine Conservation Zone Project Wales (ongoing)
 Welsh National Marine Plan (ongoing)
 National Strategy for Flood and Coastal Erosion Risk Management in Wales (2011)

Marine (Scotland) Act 2010

The Conservation (Natural Habitats, &c.) Regulations 1994 (as amended) - Scotland

Water Environment and Water Services (Scotland) Act 2003 (as amended)

Flood Risk Management (Scotland) Act 2009

The Storage of Carbon Dioxide (Licensing etc.) (Scotland) Regulations 2011 (as amended)

The Scottish Coastal Forum and Local Coastal Partnerships (established 1996)

A Follow up to Seas the Opportunity: A Strategy for the Long Term Sustainability of Scotland's Coasts and Seas (2007)

Scottish Planning Policy (2014) and the National Planning Framework for Scotland 3 (2014)

Scotland's National Marine Plan (2015)

The Scottish MPA Project (ongoing)

Marine (Northern Ireland) Act 2013

The Water Environment (Water Framework Directive) Regulations (Northern Ireland) 2003

Earth Science Conservation Review (Northern Ireland)

An Integrated Coastal Zone Management Strategy for Northern Ireland 2006-2026 (2006)

Planning Policy Statement 15: Planning and Flood Risk (2006) - Northern Ireland

MCZ Project Northern Ireland (ongoing)

The Marine Plan for Northern Ireland (ongoing)

A2.3.1 Key Objectives and Targets

The Geological Conservation Review (GCR), launched in 1977, identifies the most important (nationally and internationally) terrestrial geological sites in Britain. GCR sites are chosen such that they satisfy the legal requirements of SSSI designations for geology and physiography, and therefore they often geographically coincide with notified Earth Science-SSSIs (e.g. in Scotland 77% of sites are designated in such a way) or those which are awaiting notification. The *Marine and Coastal Access Act 2009* also amends the *Wildlife and Countryside Act 1981* in such a way that SSSI notifications can be made in England and Wales below the Mean Low Water Mark (MLWM) under certain statutory conditions, set out in the Act (e.g. the flora, fauna or features leading to the notification of the SSSI are also present in the subtidal area to which SSSI protection is to extend). The Act also provides powers to remove SSSI notifications where they coincide with new MCZs in England and Wales. Locally important sites are recognised through the Regionally Important Geological and Geomorphological Sites (RIGS) programme, though only SSSI features have any form of statutory protection.

In the marine environment, many geological features are gaining protection through designations for which they are a qualifying habitat feature (e.g. SACs designated under the Conservation of *Habitats and Species Regulations 2010*). The *Marine and Coastal Access Act 2009*, *Marine (Scotland) Act 2010* and *Marine Act (Northern Ireland) 2013* provide a means for the conservation of specific “features of geological and geomorphological interest” through the designation of MCZs or MPAs. The number of sites subject to consultation by the relevant conservation bodies have been summarised above in relation to Biodiversity, Habitats, Flora and Fauna. The location of these sites and features for which they are to be designated are mapped and discussed in the Environmental Report.

At the coast, natural denudation processes are leading to shoreline retreat and increased flood risk in many cases, which may be accentuated by projected climate and associated environmental change, which is projected to include increased storminess and sea-level rise (see Climate & Meteorology, below), and is recognised in national climate change adaptation programmes. Integrated Coastal Zone Management and appropriate planning policy aims to help manage and mitigate the problems associated with *inter alia* coastal erosion and flood risk. The *Flood and Water Management Act 2010* (England and Wales), the *Flood Risk Management (Scotland) Act 2009* and *The Water Environment (Floods Directive) Regulations (Northern Ireland) 2009* make provisions for the creation of flood risk (and in the case of England and Wales, coastal erosion) management strategies/plans. In addition to these, terrestrial and marine planning policy for England (including in relation to NSIPs) and the devolved administrations provides policy and guidance for developers and authorities on how to manage development at the coast, incorporating aspects relating to climate change (such as increased sea-levels) and the prohibition of unnecessary or inappropriate development in areas subject to erosion and coastal flooding (e.g. the creation of Coastal Change Management Areas). Shoreline Management Plans (In England and Wales) are already taking a longer term view by identifying sustainable management approaches of relevance for up to the next 100 years. Each SMP provides policy recommendations for coastal areas which may advise Holding the Line (HTL), through the maintenance of present defences or where monitoring and assessment provide evidence that new defences would be beneficial; No Active Intervention (NAI), where defences are not maintained and Managed Realignment (MR) or Retreat (R), where defences are removed and/or moved inland to allow for natural coastal denudation. Policies are provided in each SMP over three ‘epochs’, 2009-2025, 2025-2055 and 2055-2105.

The WFD seeks to achieve good ecological and chemical status for coastal and estuarine water bodies. River Basin Management Plans (RBMPs) completed for England and the devolved administrations (updated 2015) are one of the principal means that the WFD has been implemented in the UK and will be used in combination with other plans including SMPs to achieve a fully integrated approach to coastal management. RBMPs identify relevant morphological and hydrodynamic issues and the measures to manage such issues. Similarly, the MSFD seeks to achieve good environmental status in the marine environment, which incorporates geomorphological conditions. These objectives, aligned with the published and forthcoming Marine Plans should provide a holistic consideration of the geological aspects of the marine and terrestrial environment across the intertidal and coastal areas of the UK. It should be noted that the timetables for the finalisation of Marine Plans, and WFD planning cycles (second cycle ends 2021) is such that a number of revised policies and plans in this area may be made during the currency of this SEA.

Internationally, the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter 1972 (the London Convention) and 1996 protocol provide environmental law for the permanent storage of CO₂ in geological formations. The amendments to the 1996 protocol, which entered into force on 10th February 2007, state that, “*carbon dioxide streams may only be considered for dumping, if: disposal is into a sub-seabed geological formation; they consist*

overwhelmingly of carbon dioxide (they may contain incidental associated substances derived from the source material and the capture and sequestration processes used); and no wastes or other matter are added for the purpose of disposing of them." OSPAR Decision 2007/02 on the Storage of Carbon Dioxide Streams in Geological Formations, states that all contracting parties should not allow storage of CO₂ in geological formations without authorisation or regulation from their competent authorities. The decision also indicates what any permit or approval should, at least, contain. Directive 2009/31/EC establishes a European level legal framework for the environmentally safe storage of CO₂ by member states in their EEZ and Continental Shelf. The basis for this Directive is that carbon capture and storage (CCS) can provide a bridging technology whereby carbon emissions can be attenuated while renewable technologies and associated technologies provide a more sustainable energy source. The Directive also sets out a number of requirements of member states in the selection of geological stores and a permitting and monitoring regime.

At the UK level, the *Energy Act 2008* (as amended) provides a legislative basis permitting carbon storage on the UKCS, implemented by the Secretary of State for Energy and Climate Change, or Scottish Ministers in their Territorial Waters via *The Storage of Carbon Dioxide (Licensing etc.) Regulations 2010* and *The Storage of Carbon Dioxide (Licensing etc.) (Scotland) Regulations 2011*. Suitable formations may consist of saline aquifers, halite deposits or depleted hydrocarbon reservoirs. The *Energy Act 2011* makes a number of amendments to the *Energy Act 2008* with regards to the conversion of installations and pipelines for CCS demonstration along with a number of other provisions, including details relating to compulsory acquisition for CCS pipelines over land.

While Government confirmed, following confirmation from the developers of the proposed Peterhead and White Rose CCS projects, that the CCS Competition is now closed, this does not change the Government's view that CCS has a potentially important role in the long-term decarbonisation of the UK. Government is currently taking stock to determine the Government's approach to CCS in the UK and considering appropriate next steps.

A2.3.2 Implications for SEA

Activities which arise from adoption of the plan/programme should, through national (including devolved) planning policy and environmental regulation, avoid any impact on geological features of conservation interest including coastal GCRs and geological SSSIs. MCZs may be designated for features of geological and geomorphological interest, including by extending earth science SSSIs to below the low water mark, with coastal Geological Conservation Review sites also available for consideration. A number of MCZs designations include geological characteristics which provide intertidal and subtidal habitats. It is noted that for many of those sites for which further consideration is required, reasons include that of potential socio-economic costs, including that to the renewable energy sector (e.g. for Holderness Offshore). UK RBMPs and Shoreline Management Plans have provided an ecological and morphological baseline for UK estuaries and coasts which may be influenced by plan/programme activities, for instance the use of tidal range technologies could have implications for both estuarine morphology and ecology and the achievement of good ecological status. In addition to these surficial geological features, the CCS Directive makes provision for the appropriate use of geological formations for the storage of carbon dioxide, including under the seabed. These are considered in this Environmental Report, and will also be important considerations at a development specific level.

A2.4 Landscape/Seascape

Landscape/Seascape	
Regional	<p>World Heritage Convention 1972 Tentative list of possible future world heritage nominations (2012-2014)</p>
Europe	<p>Council of Europe: European Landscape Convention 2000 Directive 2014/89/EU on establishing a framework for maritime spatial planning</p>
UK	<p><i>Marine and Coastal Access Act 2009</i> UK Marine Policy Statement (2011) An approach to seascape character assessment (2012)</p>
Local	<p><i>National Parks and Access to the Countryside Act 1949</i> - England and Wales <i>Environment Act 1995</i> - England and Wales <i>Countryside and Rights of Way Act 2000</i> - England and Wales National Policy Statements for Energy (2011): - England and Wales Overarching National Policy Statement for Energy (EN-1) National Policy Statement for Renewable Energy Infrastructure (EN-3) National Policy Statement for Gas Supply Infrastructure and Gas and Oil Pipelines (EN-4) The National Planning Policy Framework (2012) - England East Inshore and Offshore Marine Plans (2014) - England South Inshore and Offshore Marine Plans (ongoing) - England Seascape Character Assessments associated with the above Marine Plans The European Landscape Convention – The English Heritage Action Plan for Implementation (2009) European Landscape Convention: guidelines for managing landscapes (2010) The National Character Areas of England (updates ongoing) England Coast Path: improving public access to the coast (ongoing) English Heritage Historic Landscape and Seascape Characterisations National Heritage Protection Plan 2011-2015 (2011) Historic Environment Good Practice Advice in Planning Note 3: The Setting of Heritage Assets (2015)</p> <p>Regional Seascape Assessment - Wales (2009) Local Seascape Character Assessment (Pembrokeshire Seascape Character Assessment, Landscape and seascapes of Eryri (Snowdonia), Anglesey seascape character assessment) - Wales (2013-onwards) LANDMAP Wales (introduced 1997, revised 2003) Cadw/ICOMOS Register of Landscapes of Outstanding Historic Interest or Special Historic Interest Technical Advice Note 12: Design (Wales) (2009) National Landscape Character Areas - Wales (2015) National Seascape Character Assessment pilot and Guidance for Wales (2011) Sustainable development for Welsh seas: Our approach to marine planning in Wales (2011) Planning Policy Wales Edition 7 (2014) National marine plan for Wales (expected 2015)</p> <p><i>Planning etc. (Scotland) Act 2006</i> <i>Marine (Scotland) Act 2010</i> <i>The Town and Country Planning (National Scenic Areas) (Scotland) Designation Directions 2010</i> Natural Heritage Futures: A National Assessment of Scotland's Landscapes (2002, updated 2009) SNH's Landscape policy framework (2005) Scottish Planning Policy (2014) and the National Planning Framework for Scotland 3 (2014) Scotland's National Marine Plan (2015)</p>

Local	<p><i>The Nature Conservation and Amenity Lands (Northern Ireland) Order 1985</i></p> <p><i>Marine (Northern Ireland) Act 2013</i></p> <p>Planning Policy Statement 1: General Principles (1998) - Northern Ireland</p> <p>Landscape Character Areas of Northern Ireland (2006)</p> <p>Planning Policy Statement 18: Renewable Energy and Wind Energy Development in Northern Ireland's Landscapes (2009), and supplementary guidance on Wind Energy (2010)</p> <p>Northern Ireland's Landscape Charter (2014)</p> <p>Northern Ireland Regional Seascape Character Assessment (2014)</p> <p>The Marine Plan for Northern Ireland (ongoing)</p>
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A2.4.1 Key Objectives and Targets

At the highest level, the European Landscape Convention (ELC) seeks to “promote landscape protection, management and planning, and to organise European co-operation on landscape issues.” (Ch. 1 Art. 2), and encompasses “the entire territory of the Parties and covers natural, rural, urban and peri-urban areas. It includes land, inland water and marine areas. It concerns landscapes that might be considered outstanding as well as everyday or degraded landscapes” (Ch. 1 Art. 1), and therefore considers that all landscapes are important, not just the outstanding but also the everyday landscapes where most people live, work and spend much of their time. The perception of landscape and seascape can go beyond that which is purely visual, and be valued in different ways (e.g. as source of economic gain, or by providing a sense of identity or wellbeing), recognised in the ELC definition of landscape, “*An area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors.*”

The ELC requires, “landscape to be integrated into regional and town planning policies and in cultural, environmental, agricultural, social and economic policies, as well as any other policies with possible direct or indirect impacts on landscape (Article 5 (d)). The ELC has been acknowledged in policy including the MPS which states that all coastal landscapes should be considered when developing marine plans, not just those which are protected through designations. Consistent with the MPS, the first of England's marine plans and Scotland's National Marine Plan both recognise that planners and developers generally take landscape and seascape into account, and as part of the process for English plans, seascape studies are being undertaken, informed by guidance commissioned as part of the first set of English marine plans. Similarly, a seascape project has recently been undertaken for Welsh waters³ and has identified 29 character areas. This complements a number of local studies (the Pembrokeshire Seascape Character Assessment, Landscape and seascapes of Eryri (Snowdonia) and Anglesey seascape character assessment).

The MPS arising from the *Marine and Coastal Access Act 2009* was issued in March 2011. The MPS states that all coastal landscapes should be considered in the preparation of the next phase of marine spatial planning (Marine Plans), not just those which are protected through designations, which is broadly complementary to the tenets of the European Landscape Convention (see policy SOC3 in the East inshore and Offshore Marine Plans). The East Inshore and Offshore marine planning process involved the commissioning of a methodological pilot study for seascape assessment, which was developed by Natural England and formalised in, *An approach to Seascape Character Assessment*, published in 2012. It is anticipated that this methodological approach will be replicated for the other marine plan areas as they are undertaken, and the assessment for the south marine plan areas has, amongst other sources and best practice, paid attention to this guidance.

³ <http://www.naturalresources.wales/our-evidence-and-reports/marine-character-areas/?lang=en>

In addition to direct considerations of landscape, the MPS and the *Marine and Coastal Access Act 2009* provide a legal and policy framework for the construction of a new national coastal trail in England and amenity land associated with this route which the public is free to use. The scheme for the implementation of this part of the Act in England and its methodology was drafted by Natural England and approved in 2010. Work is in progress on a number of stretches of coastal path, with future stretches planned up to 2019. The *Marine (Scotland) Act 2010* makes no similar provisions though both Scotland and Wales are planning their own equivalent trails. The Welsh route opened in 2012, with improvements and additional routes planned in the coming years. These coastal and national trails may not have a significant impact on seascape, but it is possible that they will encourage more people to visit the coast for recreation and hence enhance the number of receptors subject to views which could be altered by elements of the plan.

Planning policies, for instance The National Planning Policy Framework and the Energy National Policy Statements (e.g. EN-1 and EN-3), exact the highest degree of protection to "most valued" sites (i.e. statutory designated areas such as Areas of Outstanding Natural Beauty (AONBs)), but do not propose that development should be precluded within them where project design would not conflict with the interests and features for which the sites are designated. More generally, they state that all developments should be well designed and in keeping with the scale and character (modern and historic) of the local area. Linked to this topic is that of the historic environment (e.g. listed buildings, UNESCO world heritage sites, scheduled monuments), where their setting is considered to be relevant to their designation or appreciation⁴, guidance for which has been produced by Historic England in 2015.

Where developments fall within the visual range of receptors (i.e. people of all sorts, resident and transient) on the coast, or are intervisible from other viewing locations at sea, for instance from recreational or commercial vessels, their character, form, aspect, spatial extent and type of movement all influence how the seascape is experienced. In view of the use of turbines of greater size and in greater number, studies and guidance documents have been produced on the assessment of seascapes in relation to offshore wind farms, but which have findings that may be more widely applicable to other marine energy devices which have surface infrastructure. Studies were undertaken by Wales and Scotland in relation to the potential impact of offshore wind, wave and tidal devices as standalone reports or as part of SEA.

A2.4.2 Implications for SEA

Activities that may arise from the plan/programme could introduce a number of new, possibly conflicting visual elements to the landscape/seascape of the UK. It will be important at the project level, and in the drafting of further regional and national Marine Plans, to account for the degree of change in visual character that this could represent. With the exception of offshore wind, (for which the most recent Round 3 developments are proposed to occur further offshore) most activities such as carbon dioxide storage, wave and tidal energy are likely to be represented by demonstration phase or pre-commercial devices or developments in the currency of this SEA. The visual impacts of these, particularly due to their small vertical aspect, is likely to be negligible compared to offshore wind, but development specific assessments will be required as, at present, a high number of generic device types have been postulated. The potential for cost-effective deployment of tethered wind turbines may lead to further proposals for wind farms further offshore, reducing coastal impacts. In areas of cross-border intervisibility, transboundary effects are possible.

⁴ For instance, "essential setting" and "significant views" are identified in Wales in relation to registered Historic Parks and Gardens.

A2.5 Water Environment

Water Environment	
International	<p>IMO International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 (MARPOL 73/78) International Convention for the Control and Management of Ships' Ballast Water and Sediments (adopted 2004, still to enter into force) International Convention on Oil Pollution Preparedness, Response and Co-operation (1990) Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter (1972, as amended) 1996 protocol - revision to convention (2006) and amendments to 1996 protocol</p>
Regional	<p>Convention for the Protection of the Marine Environment of the North East Atlantic (the OSPAR Convention 1992) OSPAR Decision 2000/3 on the use of organic-phase drilling fluids (OPF) and the discharge of OPF-contaminated cuttings OSPAR Decision 2000/2 on a harmonised mandatory control system for the use and reduction of the discharge of offshore chemicals (as amended by decision 2005/1) OSPAR Recommendation 2000/5 on a Harmonised Offshore Chemical Notification Format (HOCNF), as amended by OSPAR Recommendation 2005/3 and 2008/2 OSPAR Recommendation 2001/1 for the Management of Produced Water from Offshore Installations as amended by Recommendation 2006/4 OSPAR Recommendation 2003/1 on the Strategy for the Joint Assessment and Monitoring Programme OSPAR Recommendation 2005/2 on Environmental Goals for the Discharge by the Offshore Industry of Chemicals that are, or Contain Added Substances, Listed in the OSPAR 2004 List of Chemicals for Priority Action OSPAR Recommendation 2006/3 on Environmental Goals for the Discharge by the Offshore Industry of Chemicals that are, or which Contain Substances Identified as Candidates for Substitution OSPAR Decision 2007/1 to Prohibit the Storage of Carbon Dioxide Streams in the Water Column or on the Sea-bed OSPAR Decision 2007/2 on the Storage of Carbon Dioxide Streams in Geological Formations The North-East Atlantic Environment Strategy (OSPAR Agreement 2010-3) OSPAR Biological Diversity and Ecosystems Strategy OSPAR Hazardous Substances Strategy OSPAR Offshore Oil and Gas Strategy OSPAR Radioactive Substances Strategy OSPAR Co-ordinated Environmental Monitoring Programme (ongoing) OSPAR Quality Status Reports (QSRs) of the North Atlantic and its sub-regions (2000 & 2010)</p>
EU	<p>Urban Waste Water Treatment Directive 91/271/EC Nitrates Directive 91/676/EC Water Framework Directive 2000/60/EC Directive 2004/35/EC on environmental liability (and amendments through 2006/21/EC, 2009/31/EC and 2013/30/EU) Bathing Water Directive 2006/7/EC European Shellfish Waters Directive 2006/113/EC Directive 2007/60/EC on the assessment and management of flood risks Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) Integrated Pollution Prevention Control Directive (2008/1/EC) Marine Strategy Framework Directive 2008/56/EC Environmental Quality Standards Directive 2008/105/EC Directive 2013/39/EU amending Directives 2000/60/EC and 2008/105/EC as regards priority substances in the field of water policy Environmental Impact Assessment Directive (2011/92/EU - codified version) and amending Directive 2014/52/EU</p>

UK	<p><i>Water Resources Act 1991</i> (as amended) <i>The Offshore Chemicals Regulations 2002</i> (as amended) <i>UK Marine and Coastal Access Act 2009</i> <i>The Marine Strategy Regulations 2010</i> Marine Policy Statement (2011) Charting Progress 2 (2010) River Basin Management Plans for respective administrations, including those which are cross-border Safeguarding our seas: A strategy for the conservation and sustainable development of our marine environment (Defra 2002) Our Seas – a shared resource. High level marine objectives (2009) Marine Strategy Part 1: UK Initial Assessment and Good Environmental Status (2012) Marine Strategy Part 2: UK Marine Monitoring Programmes (2014) Marine Strategy Part 3: UK Programme of Measures (2015) UK Climate Change Risk Assessment (2012) National contingency plan for marine pollution from shipping and offshore installations (2012 - presently being updated)</p>
Local	<p><i>The Water Environment (Water Framework Directive) (England and Wales) Regulations 2003</i> <i>The Flood Risk Regulations 2009</i> - England and Wales <i>Flood and Water Management Act 2010</i> - England and Wales <i>Environmental Damage (Prevention and Remediation) Regulations 2009</i> (as amended) - England Flooding in England: A National Assessment of Flood Risk (2009) National flood and coastal erosion risk management strategy for England (2011) National Policy Statements for Energy (2011): - England and Wales Overarching National Policy Statement for Energy (EN-1) National Policy Statement for Renewable Energy Infrastructure (EN-3) National Policy Statement for Gas Supply Infrastructure and Gas and Oil Pipelines (EN-4) National Policy Statement for Ports (2012) - England The National Planning Policy Framework and separate flood risk technical guidance (2012) - England East Inshore and Offshore Marine Plans (2014) - England South Inshore and Offshore Marine Plans (ongoing) - England Marine Pollution Contingency Plan (2014) - England and Wales Shoreline Management Plans - England and Wales</p> <p><i>The Environmental Damage (Prevention and Remediation) (Wales) Regulations 2009</i> Technical Advice Note 15: Development and Flood Risk (2004, updated advice maps 2015) - Wales Making the Most of Wales' Coast: Integrated Coastal Zone Management Strategy (2007 - under review as part of national marine planning) National Strategy for Flood and Coastal Erosion Risk Management (2011) - Wales Welsh National Marine Plan (ongoing)</p> <p><i>Water Environment and Water Services (Scotland) Act 2003</i> <i>Water Environment (Controlled Activities) (Scotland) Regulations 2011</i> <i>Flood Risk Management (Scotland) Act 2009</i> <i>The Environmental Liability (Scotland) Regulations 2009</i> (as amended) <i>Marine (Scotland) Act 2010</i> A Follow up to Seas the Opportunity: A Strategy for the Long Term Sustainability of Scotland's Coasts and Seas (2007) National Flood Risk Assessment - Scotland (2011) Flood Risk Management Strategies - Scotland (2015) Scottish Planning Policy (2014) and the National Planning Framework for Scotland 3 (2014) Scotland's National Marine Plan (2015)</p> <p><i>The Water Environment (Water Framework Directive) Regulations (Northern Ireland) 2003</i> <i>The Water Environment (Floods Directive) Regulations (Northern Ireland) 2009</i> <i>The Environmental Liability (Prevention and Remediation) Regulations (Northern Ireland) 2009</i> (as amended) <i>Marine Act (Northern Ireland) 2013</i> An Integrated Coastal Zone Strategy for Northern Ireland 2006-2026 (2006) The Marine Plan for Northern Ireland (ongoing) PPS 15 Planning and Flood Risk (2013) - Northern Ireland</p>

A2.5.1 Key Objectives and Targets

The International Convention for the Prevention of Pollution from Ships (MARPOL) addresses pollution from ships and in part from offshore installations arising from oil, noxious liquids carried in bulk, harmful substances in packaged form, sewage and garbage (Annexes I-V) and

in subsequent amendments. MARPOL covers pollution events arising from both operational and accidental causes.

At a regional level, the OSPAR Convention for the protection of the marine environment of the North East Atlantic has the aim of preventing pollution and to protect the marine environment from detrimental effects of human activity. The OSPAR Convention defines pollution as the introduction by man, directly or indirectly, of substances or energy into the maritime area which results, or is likely to result, in hazards to human health, harm to living resources and marine ecosystems, damage to amenities or interference with other legitimate uses of the sea. The 16 parties to this convention (which includes the UK) are asked to observe the *precautionary principle* and the *polluter pays principle* to meet their obligations. In 1998 Annex V was adopted, specifically aimed at biodiversity and ecosystem protection to cover non-polluting human activities that can adversely affect the sea. OSPAR has several long-term strategies under the heading of its, North-East Atlantic Environment Strategy, aimed at improving the marine environment with regard to certain topics, these include:

- Biological Diversity and Ecosystems Strategy – concerned with non-polluting human activity that can have adverse effects on the marine environment. A key element of this strategy is the establishment of a network of Marine Protected Areas.
- Eutrophication Strategy – sets the objective to combat eutrophication in the OSPAR maritime area, in order to achieve and maintain by 2010 a healthy marine environment where eutrophication does not occur.
- Hazardous Substances Strategy – sets the objective of preventing pollution of the maritime area by continuously reducing discharges, emissions and losses of hazardous substances, with the ultimate aim of achieving concentrations in the marine environment near background values for naturally occurring substances and close to zero for man-made synthetic substances, with the target of the cessation of discharges, emissions and losses of hazardous substances by the year 2020.
- Offshore Oil and Gas Strategy – to prevent and eliminate pollution from offshore sources and to protect the OSPAR maritime area against the adverse effects of offshore activities so as to safeguard human health and conserve the marine ecosystems, and where practicable restore affected areas.
- Radioactive Substances Strategy – aims to reduce discharges, emissions and losses of material such that concentrations in the marine environment above historic levels are close to zero by 2020.

The culmination of a number of information gathering and assessment initiatives are presented in the OSPAR Quality Status Reports (QSR) (2001, 2010), which provide significant information on the current state of the UK and neighbouring seas, and the activities which affect them. Key aspects of the QSR cover biodiversity, eutrophication, hazardous substances, offshore oil and gas industry and radioactive substances. At a national level, Charting Progress 2, a Defra initiative published in July 2010, provides an updated assessment of the state of UK seas since Charting Progress was first published in 2005. Supporting technical reports on healthy and biologically diverse seas, ocean processes, clean and safe seas, and productive seas provide relevant information on the current baseline and issues affecting the water environment, and provide the basis of Marine Strategy Part 1: UK Initial Assessment and Good Environmental Status (2012).

A number of European level directives have been implemented nationally which aim to protect the terrestrial and marine environments, and these include the Urban Wastewater Treatment Directive, the Nitrates Directive, the WFD and MSFD. The WFD seeks to achieve “good ecological and chemical status/potential” for a range of terrestrial, transitional (i.e. estuarine) and coastal waters out to 1nm (or 3nm in Scottish waters) and is in the second cycle of planning to 2021. As much marine pollution is generated from terrestrial activities, the control of certain substances entering coastal waters from riverine sources and other direct discharges is important in the control of marine pollution. The Nitrates Directive and Urban Wastewater Treatment Directive seek to protect the environment from the adverse effects of nitrogen from agricultural sources and sewage discharges respectively in this regard, and the most hazardous other chemicals are covered under the Environmental Quality Standards Directive.

In a similar approach to the WFD, the MSFD seeks to achieve “good environmental status” in Europe’s seas by 2020. The UK transposition of the MSFD is primarily through *The Marine Strategy Regulations 2010*. These require the development of the five elements of the marine strategy: (1) the assessment of marine waters; (2) the determination of the characteristics of good environmental status for those waters; (3) the establishment of environmental targets and indicators; (4) the establishment of a monitoring programme; (5) the publication of a programme of measures. Qualitative descriptors for determining good environmental status are listed in Annex I of the MSFD and those of relevance to the water environment include:

- Human-induced eutrophication is minimised, especially adverse effects thereof, such as losses in biodiversity, ecosystem degradation, harmful algae blooms and oxygen deficiency in bottom waters.
- Permanent alteration of hydrographical conditions does not adversely affect marine ecosystems.
- Properties and quantities of marine litter do not cause harm to the coastal and marine environment.
- Introduction of energy, including underwater noise, is at levels that do not adversely affect the marine environment.

Directive 2004/35/EC on environmental liability (and amendments through 2006/21/EC, 2009/31/EC and 2013/30/EU) with regard to the prevention and remedying of environmental damage (primarily transposed through the *Environmental Damage (Prevention and Remediation) Regulations 2015* – separate regulations apply in the devolved administrations) is applicable to *inter alia* the aquatic environment covered by the WFD. The Directive, based on the polluter pays principle, establishes a framework to prevent and remedy environmental damage at a reasonable cost to society. The directive applies strict liability to those operators of inherently hazardous activities listed in Annex III of the Directive which includes those subject to Integrated Pollution Prevention and Control (IPPC), and fault based liability for other activities.

The MPS underpins UK marine spatial planning which is being implemented under the *Marine and Coastal Access Act 2009*. The first regional marine plans (East Inshore and Offshore) were adopted in 2014 with the second plans (South Inshore and Offshore) due for consultation in 2015. National marine plans of the devolved administrations have either been published (Scotland, 2015) or are in preparation (Northern Ireland and Wales). These plan policies, though regionally specific, are to be consistent with national scale policy included in the MPS. With regards to water environment, the MPS indicates that marine plan authorities (e.g. the MMO, Scottish Ministers) must contribute to or align with delivery of the policies and objectives of relevant RBMPs and the MSFD.

Climate change is likely to have a pervasive effect on all aspects of the coastal and marine environment including flooding, coastal erosion, water quality and resources. Output from the UK Climate Impacts Programme (UKCIP) reflects both past conditions derived from historical record and projections of future climate change across a range of terrestrial and marine variables, allowing for a measure of the uncertainty in future climate projections. The latest output (UKCP09) has significantly enhanced its consideration of marine and coastal environments from previous assessments and a specific marine and coastal projections report (co-authored by the Marine Climate Change Impacts Partnership (MCCIP)) includes projections of changes in air-temperature over the sea, future sea-level rise, sea temperature, salinity, stratification and circulation, storm surge and wave climate. Changes to the information base (e.g. as presented in the IPCC AR5) are likely to mean that enhanced projections of future terrestrial and marine climate change will become available for the UK within the currency of OESEA3.

A2.5.2 Implications for SEA

The SEA considers the above international and national scale measures to reduce operational and accidental discharges at sea and from the terrestrial environment in relation to the possible impacts of the plan/programme (e.g. operational and accidental discharges from oil and gas exploration and production and transportation and storage of CO₂). The SEA considers any potential to affect the attainment of good environmental status under the MSFD through, for instance, altering hydrographical conditions (e.g. wave, tidal stream and range devices) and also introducing significant levels of noise (e.g. seismic survey and pile driving). The SEA has reflected the most recent monitoring and progress reports (e.g. Charting Progress 2, OSPAR QSR 2010) in its baseline compilation and assessment.

A2.6 Air Quality

Air Quality	
International	<p>Marine Pollution Convention, MARPOL 73/78 (the International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978)</p> <p>Geneva Convention on Long Range Transboundary Air Pollution (1979)</p> <p>Vienna Convention for the protection of the ozone layer (1985)</p> <p>Montreal Protocol on substances that deplete the ozone layer (1987) and subsequent updates and adjustments</p> <p>Stockholm Convention on Persistent Organic Pollutants (2001)</p> <p>UNEP Global Mercury Partnership and Proposed Treaty</p> <p>2008 amendment of MARPOL on a revised Annex VI dealing with the reduction in the emission of sulphur from shipping, enacted in 2010</p> <p>Consolidated text of the amended Protocol to Abate Acidification, Eutrophication and Ground-level Ozone (2012)</p>
Regional	<p>The Convention for the Protection of the Marine Environment of the North East Atlantic (OSPAR) 1998</p> <p>The UNECE Convention on Long Range Transboundary Air Pollution (1999, amended in 2012)</p>
EU	<p>Directive 2001/81/EC on National Emissions Ceilings for certain pollutants</p> <p>Directive 2004/107/EC relating to arsenic, cadmium, mercury, nickel and polycyclic aromatic hydrocarbons in ambient air</p> <p>Directive 2004/35/EC on environmental liability with regard to the prevention and remedying of environmental damage</p> <p>Directive 2005/33/EC amending Directive 1999/32/EC as regards the sulphur content of marine fuels</p> <p>Directive 2008/50/EC on ambient air quality and cleaner air for Europe (2008)</p> <p>Regulation 1005/2009 on substances that deplete the ozone layer amended by Regulation 744/2010 on substances that deplete the ozone layer, with regard to the critical uses of halons</p> <p>The Clean Air Policy Package (2013) building on the EU Thematic Strategy on Air Quality (2005)</p> <p>Directive 2008/1/EC concerning integrated pollution prevention and control (codified version)</p> <p>EU Seventh Environmental Action Plan to 2020 (2013)</p> <p>Directive 2010/75/EU on industrial emissions (integrated pollution prevention and control) and Directive 2001/80/EC on the limitation of emissions of certain pollutants into the air from large combustion plants</p> <p>Directive 2012/33/EU amending Council Directive 1999/32/EC as regards the sulphur content of marine fuels</p> <p>Regulation 517/2014 on fluorinated greenhouse gases</p>
UK	<p><i>Clean Air Act 1993 (as amended)</i></p> <p><i>Offshore Combustion Installations (Prevention and Control of Pollution) Regulations 2001 (as amended)</i></p> <p><i>National Emission Ceilings Regulations 2002</i></p> <p><i>The Merchant Shipping (Prevention of air pollution from ships) Regulations 2008 (as amended)</i></p> <p><i>The Pollution Prevention and Control (Designation of the Industrial Emissions Directive) (Offshore) Order 2013</i></p> <p><i>The Fluorinated Greenhouse Gas Regulations 2015</i></p> <p><i>Greenhouse Gas Emissions Trading Scheme Regulations 2012</i></p> <p><i>The Air Quality Strategy for England, Scotland, Wales and Northern Ireland (2007)</i></p> <p><i>Air Pollution: Action in a Changing Climate (Defra 2010)</i></p>

Air Quality (England) Regulations 2000
Air Quality (Standards) Regulations 2010 - England
Environmental Permitting (England and Wales) Regulations 2010
Pollution Prevention and Control (Designation of Directives) (England and Wales) Order 2013
The Air Quality Standards (Wales) Regulations 2010
 Environment Strategy for Wales (2006 - under review)
The Air Quality Standards (Scotland) Regulations 2010
Pollution Prevention and Control (Designation of Industrial Emissions Directive) (Scotland) Order 2011
The Air Quality Standards Regulations (Northern Ireland) 2010

A2.6.1 Key Objectives and Targets

MARPOL addresses the prevention of marine pollution from ships and in part from offshore installations. It includes six annexes covering pollution by oil, noxious liquids carried in bulk, harmful substances in packaged form, sewage, garbage and air pollution. Less specific to marine activities, the Convention on Long-Range Transboundary Air Pollution 1979 considers transboundary pollutants including persistent organic pollutants, heavy metals, sulphur, VOCs and nitrogen oxides.

The Government's Air Quality Strategy for England, Scotland, Wales and Northern Ireland (2007) set national air quality standards with the objective of protecting human health, vegetation and ecosystems. In the longer term, these standards along with other strategies connected with climate change could significantly improve air quality and achieve meaningful reductions in CO₂ by 2050. Many of the standards set in the strategy are derived from EU obligations for the reduction or non-exceedance of a particular pollutant. The UK has an obligation to reduce or limit the emission of certain pollutants under Directives including but not limited to Directive 2001/81/EC on National Emissions Ceilings for certain pollutants and 2008/50/EC on ambient air quality and cleaner air for Europe, with the latter given effect in the UK by the Air Quality Standards Regulations 2010 (and those equivalent regulations of the devolved administrations). Directive 2008/50/EC did not alter former air quality objectives set out in the Air Quality Framework Directive (1996/62/EC) and Daughter Directives, though has a number of other key elements:

- Existing legislation⁵ has been merged into a single directive (with the exception of 2004/107/EC) with no changes to existing air quality objectives.
- New objective for PM_{2.5} including a limit value and exposure related objectives.
- The possibility to exclude natural sources of pollution in assessing compliance values where they can be reliably measured and where exceedances are due in whole or part to natural contributions.
- Possible time extensions of three years for PM₁₀, or five years for NO₂ and benzene for compliance with limit values, based on conditions and assessment by the EC.

Directive 2004/35/EC on environmental liability with regard to the prevention and remedying of environmental damage applies to a number of areas including damage caused by "airborne elements as far as they cause damage to water, land or protected species or natural habitats".

⁵ Air Quality Framework Directive (1996/62/EC), daughter Directives 1999/30/EC, 2000/69/EC, 2002/3/EC, and Decision on Exchange of Information 97/101/EC.

As an addendum to the Air Quality Strategy for England, Wales, Scotland and Northern Ireland (2007), Defra and the devolved administrations published, Air Pollution: Action in a Changing Climate (2010), which outlines how further health benefits may be drawn from the integration of air quality and climate change policies (see below for more discussion on climate change related initiatives). The core messages in this publication are:

- Activities which generate air pollution are often also those which create emissions of gases associated with climate change, and it would therefore be conducive to consider the linkages between climate change and air quality policy areas.
- Connected with the above point, the UK's commitment to build a 'Low Carbon Economy' by 2050 will reduce air pollution, though by varying degrees depending on choices relating to achieving this goal (e.g. energy use and generation mix, and any carbon abatement technology). Optimizing climate policy decisions to account for air pollution could yield economic benefits of approximately £24 billion by 2050 for instance through the improvement of life expectancy from the use of low carbon transport and energy technologies.
- The promotion of low-carbon vehicles and renewable sources of energy that do not involve combustion will contribute to both climate change and air quality targets. At the same time, actions that tackle climate change but damage air quality must be avoided.
- Action will be needed at international, EU, national, regional and local levels to ensure air quality and climate change policies are efficiently integrated and to ensure ambitious but realistic air quality targets are set for the future.

A2.6.2 Implications for SEA

The plan/programme is set in the wider context of providing both a secure and diverse energy supply, and tackling emissions associated with anthropogenically augmented climate change (see below). Certain activities associated with the plan/programme, including the operation of maintenance and supply vessels and power generation, will contribute to reduction of air quality in some areas. Port expansion, or the increased uptake of available port capacity, may have negative local consequences for air quality in these areas, perhaps contributing to the perpetuation of certain Air Quality Management Areas (AQMAs), which in turn may have health implications. Any offset in energy production from fossil fuel electricity generating stations by the renewable technologies covered by the plan/programme would further contribute to reducing air quality impacts, and in meeting UK targets for the reduction of certain atmospheric emissions.

A2.7 Climate & Meteorology

Climate & Meteorology	
International	<p>The United Nations Framework Convention on Climate Change Kyoto Protocol to the UN Framework Convention on Climate Change The Copenhagen Accord (2009) Intergovernmental Panel on Climate Change Fifth Assessment Report (2013-2014) The Paris Agreement (2015)</p>
EU	<p>European Climate Change Programme I (2000) and II (2005) Directive 2001/80/EC on the limitation of emissions of certain pollutants into the air from large combustion plants Directive 2010/75/EU on industrial emissions (integrated pollution prevention and control) (Recast) Communication COM(2008) 30: 20 20 by 2020 Europe's climate change opportunity Directive 2009/28/EC on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC Directive 2009/29/EC amending Directive 2003/87/EC so as to improve and extend the greenhouse gas emission allowance trading scheme EU Seventh Environmental Action Plan to 2020 (2013) Communication COM(2013) 216: An EU Strategy on adaptation to climate change (2013) Directive 2009/31/EC on the geological storage of carbon dioxide</p>
UK	<p><i>Climate Change Act 2008</i> <i>The Energy Act 2008</i> (as amended) <i>The Energy Act 2010</i> <i>The Climate Change Act 2008 (2020 Target, Credit Limit and Definitions) Order 2009</i> <i>The Climate Change Act 2008 (Credit Limit) Order 2011</i> <i>The Carbon Budget Order 2011</i> <i>Greenhouse Gas Emissions Trading Scheme Regulations 2012</i> <i>The Emissions Performance Standard Regulations 2015</i> The Carbon Plan: delivering our low carbon future (2011) Marine Policy Statement (2011) Sustainable Development Strategy (2006) Stern Review of the Economics of Climate Change (2006) Committee on Climate Change: Building a Low-Carbon Economy - the UK's contribution to tackling climate change (2008), Meeting carbon budgets - ensuring a low-carbon recovery (2010) UK Climate Impacts Programme (UKCIP) (update 2009, UKCP09 and forthcoming update, UKCP18) Marine Climate Change Impacts Partnership (MCCIP), including annual report cards Health Effects of Climate Change in the UK (2012) UK Climate Change Risk Assessment (2012) The National adaptation programme (2013)</p>
Local	<p>East Inshore and Offshore Marine Plans (2014) - England South Inshore and Offshore Marine Plans (ongoing) - England</p> <p><i>Environment (Wales) Bill</i> Environment Strategy for Wales (2006 - under review) Wales Changing Climate: Challenging Choices: the Impact of Climate Changes in Wales 2020-2080 (2000) A Low Carbon Revolution: Wales' Energy Policy Statement (2010) Climate Change Strategy for Wales (2010) and Adaptation Deliver Plan (2010) Energy Wales: A Low Carbon Transition (2012) Welsh National Marine Plan (ongoing)</p>

The Climate Change (Scotland) Act 2009
The Climate Change (Annual Targets) (Scotland) Order 2010
The Climate Change (Annual Targets) (Scotland) Order 2011
The Climate Change (Limit on Carbon Units) (Scotland) Order 2011
 Changing Our Ways – Scotland’s Climate Change Programme (2006)
 Climate Change Delivery Plan: Meeting Scotland’s Statutory Climate Change Plans (2009)
 Scotland’s Climate Change Adaptation Framework (2009)
 Committee on Climate Change: Scotland’s Path to a Low-Carbon Economy (2010)
 A Low Carbon Economic Strategy for Scotland (2010)
 Low Carbon Scotland: The Second Report on Proposals and Policies (2013)
 Scottish Climate Change Adaptation Programme (2014)
 Scotland’s National Marine Plan (2015)

Northern Ireland Climate Change Bill (pre-consultation in 2013)
 Preparing for Climate Change in Northern Ireland (2007)
 Northern Ireland Greenhouse Gas Action Plan (2011)
 The Climate Change Risk Assessment for Northern Ireland (2012)
 The Northern Ireland Climate Change Adaptation Programme (2014)
 The Marine Plan for Northern Ireland (ongoing)

A2.7.1 Key Objectives and Targets

The United Nations Framework Convention on Climate Change entered into force in 1994, a precursor to the Kyoto Protocol which sets legally binding targets for the reduction of greenhouse gases which are associated with anthropogenically induced climate change. 184 parties have ratified the Kyoto Protocol to date, including the UK. Most recently, the Paris Agreement was adopted by parties to the United Nations Framework Convention on Climate Change (UNFCCC) in December 2015 and will likely come into force in 2016/2017 following ratification. The agreement aims to hold the increase in global average temperatures well below 2°C above pre-industrial levels, and to pursue efforts to limit this to 1.5°C (Article 2). A high level overview of the main provisions of the Agreement is set out below:

- An aim to reach global peaking of greenhouse gas emissions as soon as possible, to undertake rapid reductions thereafter in accordance with best available science, and to achieve a balance between emissions and removals by sinks in the second half of this century.
- To communicate and maintain successive nationally determined contributions which reflect its highest possible ambition. A nationally determined contribution shall be communicated every 5 years, with the first considered on a common timeframe, and also report on these
- The lead should be taken by developed countries by undertaking economy-wide absolute emission reduction targets, with developing country should continuing to enhance their mitigation efforts, moving in time to economy-wide emission reduction or limitation.
- All Parties should strive to formulate and communicate long-term low greenhouse gas emission development strategies in line with their common but differentiated responsibilities and capabilities.

- Parties should take action to conserve and enhance, as appropriate, sinks and reservoirs of greenhouse gases as referred to in Article 4, paragraph 1(d), of the Convention, including forests⁶.
- Establish the global goal on adaptation of enhancing adaptive capacity, strengthening resilience and reducing vulnerability to climate change, with a view to contributing to sustainable development and ensuring an adequate adaptation response in the context of the temperature goal referred to in Article 2.
- Recognize that adaptation is a global challenge, that the need for adaptation is significant and that greater levels of mitigation can reduce the need for additional adaptation efforts.
- Strengthen cooperation on enhancing action on adaptation, and engage in adaptation planning processes and the implementation of actions, including the development or enhancement of relevant plans, policies and/or contributions.
- Recognize the importance of averting, minimizing and addressing loss and damage associated with the adverse effects of climate change, including extreme weather events and slow onset events, and the role of sustainable development in reducing the risk of loss and damage, with the meeting of the Parties to the Paris Agreement being through the Warsaw International Mechanism for Loss and Damage associated with Climate Change Impacts.
- Developed country Parties shall provide financial resources to assist developing country Parties with respect to both mitigation and adaptation in continuation of their existing obligations under the Convention.
- Parties share a long-term vision on the importance of fully realizing technology development and transfer in order to improve resilience to climate change and to reduce greenhouse gas emissions, served under the Technology Mechanism of the Convention
- Capacity-building under this Agreement should enhance the capacity and ability of developing country Parties, in particular countries with the least capacity, and those that are particularly vulnerable to the adverse effects of climate change.
- Parties shall cooperate in taking measures, as appropriate, to enhance climate change education, training, public awareness, public participation and public access to information.
- Establish an enhanced transparency framework for action and support, with built-in flexibility which takes into account Parties' different capacities and builds upon collective experience.
- A "global stocktake" will periodically review the implementation of the Agreement to assess the collective progress towards achieving its purpose, the first taking place in 2023 and every 5 years thereafter.

⁶ sinks and reservoirs of all greenhouse gases not controlled by the Montreal Protocol, including biomass, forests and oceans as well as other terrestrial, coastal and marine ecosystems.

In the UK, the *Energy Act 2008* (as amended) aims to not only help maintain energy supply reliability, promote competitive markets and ensure affordable heating, but also contribute to the reduction in greenhouse gas emissions (most notably CO₂) which have been linked to anthropogenically augmented climate change. *The Energy Act 2010* implemented some of the key measures of the UK Low Carbon Transition Plan (2007, superseded by the Carbon Plan, 2011), including the introduction of mandatory social price support to tackle fuel poverty and a number of measures to ensure fairness in the energy markets. *The Energy Act 2011* (as amended) primarily sets out the legislative context for the UK Government's Green Deal, however also includes provisions and consequential amendments in relation to energy security (e.g. access to upstream petroleum infrastructure), and a number of sections outlining measures to reduce carbon emissions, which includes: offshore electricity transmission, the conversion of infrastructure for CCS, and compulsory purchase in relation to CCS pipelines.

The *Climate Change Act 2008* makes provisions for the reduction of CO₂ equivalent emissions (i.e. includes other notable greenhouse gases including CH₄ and N₂O) through a number of measures, including the setting of a "carbon budget". The UK Government is committed to the reduction of greenhouse gas emissions by 80% on 1990 levels by 2050, with interim targets of 34% by 2020, 50% by 2025, and 57% by 2032 implemented in the *Climate Change Act 2008* and the *Carbon Budget Order 2011*. The Act aims to meet this target through a range of measures, but principally through the establishment and work of the Committee on Climate Change (CCC), a system of carbon budgeting and trading, activities that reduce or remove greenhouse gases from the atmosphere and promotion through financial incentive, the production of less waste and more recycling. Subsequent *Climate Change Act Orders* outline carbon budgets for defined time periods, with the most recent (fourth) carbon budget (*The Carbon Budget Order 2011*), containing a target of 50% reduction in emissions on 1990 emissions by 2025. The fifth carbon budget covering the years 2028-2032 has been recommended to contain a reduction target of 57% by 2032, but is yet to be formally legislated on. DECC are due to make a decision on the level of this budget by the end of June 2016. In Wales, the 2010 Climate Change Strategy outlined a target to reduce greenhouse gas emissions by 3% each year from 2011 relative to a 2006-2010 baseline, and a reduction of 40% on 1990 levels by 2020 for all sectors.

A number of initiatives have stemmed from these reduction targets and other provisions of the Act, for instance the establishment of a National Adaptation Programme based on the Climate Change Risk Assessment, which forms part of Defra's Adapting to Climate Change in England programme. The seventh statutory report to Parliament by the CCC on progress towards meeting the carbon budgets set to date, has indicated that despite meeting the first carbon budget, when considering the pace of the underlying emissions reductions, and accounting for the impacts of the recession, the UK is not on target to meet subsequent budgets. The CCC made a series of recommendations, and indicated that it would be necessary for Government to develop and implement further measures/strategies/policy to support the achievement of the statutory carbon budget – projections for 2013 to 2022 suggest that the UK will meet its second and third carbon budgets but that there is a shortfall in the fourth carbon budget assuming no new effort (e.g. additional policy).

Similarly, in Scotland the *Climate Change (Scotland) Act 2009* sets an interim 42% reduction target for greenhouse gases by 2020, increasing to 80% by 2050 on 1990 levels. Scottish ministers have set annual targets through secondary legislation (*The Climate Change (Annual Targets) (Scotland) Order 2010* and *2011*), presently covering the period from 2010-2027. Scotland missed its first annual emissions target and is likely to miss its second; however this was due to weather and improvements in the way emissions inventories were calculated, however generally performed better than the UK as a whole. Recommendations were also made by the CCC in their fourth report on Scotland's progress towards meeting emission

reduction targets including in relation to low-carbon heat, energy efficiency, the public sector, transport and agriculture.

In December 2011, the UK Government published the Low Carbon Plan, which outlined how the challenges of reducing greenhouse gas emissions as part of the four carbon budgets will be met for each sector while ensuring clean, affordable and secure energy supplies. The development of CCS is an important element of the Carbon Plan, which is expected to be economically and technologically proven in the 2020s. In preparation for this, all new fossil fuel power stations of a type covered by the Large Combustion Plant Directive⁷ and with a capacity of 300MWe⁸ or greater are not to be consented unless it can be demonstrated that carbon capture technology can feasibly be retrofitted, and the UK Government has reiterated its commitment to the phasing out of unabated coal-fired power stations, with a consultation due to commence in spring 2016 on the timing of plant closures. The transition from coal fired power stations is contingent upon new gas capacity being realised within the timescale set.

CCS and renewables deployment could contribute to a significant reduction in carbon emissions during the currency of this SEA. At an international level, the UK has a legally binding target to generate 15% of energy from renewable sources by 2020, stemming from the EU Renewable Energy Directive (2009/28/EC). The UK Government Renewable Energy Strategy (2009) initially outlined scenarios for achieving this goal, superseded by the Renewable Energy Roadmap in 2011, which is reported on annually. In Scotland, the 2020 Routemap for Renewable Energy reflects the Scottish Government's target to produce 100% of electricity from renewables by 2020. An indication of progress towards decarbonising the energy industry in Wales, and what the Welsh Government intends to do during its current term to aid a low carbon transition is provided in Energy Wales: A Low Carbon Transition (2012). In the UK, the deployment of renewable energy has been incentivised through the Renewables Obligation since 2002 (see the *Renewables Obligation Order 2009*, as amended), whereby renewable electricity generators sell their Renewables Obligation Certificates (ROCs) to suppliers which guarantees a premium above wholesale market prices. Suppliers then present their ROCs to Ofgem to show their compliance (i.e. whether they have met their annual obligation), and pay a penalty if they fail to do so. The value of each ROC is decided between the generator and supplier. Under the UK Government's Electricity Market Reform there will be a transition from the Renewables Obligation to "Contracts for Difference" (CfDs), which will be the new support mechanism for renewables, new nuclear and CCS from 2014. The related policy and processes involved in this transition was set out in a consultation which closed in September 2013, also see *The Renewables Obligation Closure Order 2014* (as amended). CfDs will be offered to operators at a fixed price, with the operator paying back any difference between the value of the CfD and wholesale electricity prices for electricity, effectively capping the cost of electricity to the consumer from these sources. Progress towards the promotion and use of energy from renewable sources under Article 22 of the Renewable Energy Directive for the UK was most recently provided in January 2016, which indicated that the interim target of 5.4% for the period 2013-14 was met at 6.3% (7% in 2014).

Shipping emissions are becoming a greater concern both in relation to the environmental and health implications they pose, but also their contribution to climate change. The Marine Environment Protection Committee of the International Maritime Organization (IMO) agreed amendments to the Annex VI regulations of MARPOL to further reduce harmful emissions from

⁷ Replaced by the Industrial Emission Directive (2010/75/EU) on 1st January 2016.

⁸ DECC (2009). Carbon Capture Readiness (CCR). A guidance note for Section 36 Electricity Act 1989 consent applications. Also see, Carbon capture and storage – Commons Library Standard Note SN/SC/5086, 3rd May 2013, and Overarching National Policy Statement for Energy (EN-1).

ships, comprising a progressive reduction in sulphur oxide (SO_x) emissions. Progressive reductions in nitrogen oxide (NO_x) emissions were also agreed, with the most stringent controls being placed on those engines installed on ships constructed on or after 1st January 2016 (see also Directive 2012/33/EU amending Council Directive 1999/32/EC as regards the sulphur content of marine fuels). On 1st July 2010, the amendments to MARPOL came into effect such that ships operating in the North Sea and English Channel will need to use fuel not exceeding 1% sulphur, reducing to 0.1% in 2015. Shipping is presently the source of approximately 3% of global CO₂ emissions (Third IMO GHG Study 2014), though they are excluded from reduction targets in the Kyoto Protocol. Similarly, at the national level international shipping (and aviation) emissions are not specified within the 2050 Climate Change Act target, nor any related carbon budget order, but accounted for 8.7MtCO₂ of UK shipping emissions in 2013. Domestic shipping emissions, which are included in carbon budgets accounted for 2.2MtCO₂ in 2013. The CCC (2008) state that there is significant uncertainty in trying to apportion the UK component of global shipping emissions and that a global emissions cap would be one way to overcome the issue, and the IMO are open to cap-and-trade methods. The CCC (2011) indicated that by 2050 the UK's international shipping emissions could account for up to 11% of those emissions permitted under the *Climate Change Act*, and recommended that they should therefore be accounted for in budgets three to four. The *Climate Change Act 2008* contained a requirement that Government consider their inclusion of international shipping and aviation by the end of 2012, fulfilled through the Parliamentary Report, UK Carbon budgets and the 2050 target: international aviation and shipping emissions, in December 2012. At that time, the Government decided to defer the inclusion of international aviation and shipping within the current net carbon account due to uncertainty of the nature of future global emissions reductions agreements. Despite this deferral, existing UK carbon budgets have taken account of international shipping emissions by constraining the budgets of other sectors to 2027 such that the UK would be on an emissions trajectory consistent with 2050 reductions, including these international emissions.

At an international level, the IPCC provide information and evidence for climate change, its impacts, and how mitigation and adaptation might help alleviate its worst effects. The IPCC published their latest Assessment Report (AR5) in 2013-2014. In the UK, the UKCP09 provides medium- to long-term projections (to 2100) for climate change specific to the UK and UK marine area. The evidence base for climate change in the UK continues to be updated through the UK Climate Projections reports, most recently UKCP09, which remains current albeit with updates to its weather generator model, and revisions now being planned for UKCP18. The MCCIP has close ties with the UKCP programme, and these programmes help to provide climate change evidence and advice which may be used to inform policy and decision-makers, for example, a consideration of scenarios produced for UKCP09 is recommended in the MPS.

A2.7.2 Implications for SEA

The plan/programme is strongly associated with a number of key climate change related targets outlined above, including in relation to renewables deployment and emissions reductions. The SEA can acknowledge and consider the potential contribution of the plan/programme to these targets, but also that the aspects of energy production and supply covered are part of a wider UK energy mix (e.g. including onshore renewables, new nuclear and gas/coal fired generation), for which policy directions are presently under review.

A2.8 Population and Human Health

Population & Human Health	
International	<p>World Summit on Sustainable Development, Johannesburg, 2002</p> <p>Aarhus Convention (Convention on Access to Information, Public Participation in Decision Making and Access to Justice in Environmental Matters) (1998)</p> <p>Espoo Convention on Environmental impact Assessment in a Transboundary Context (1991)</p> <p>Commission on Social Determinants of Health (2008), 'Closing the gap in a generation: health equity through action on the social determinants of health and the Rio Political Declaration on Social Determinants of Health (2011)</p>
Regional	<p>Children's Environment and Health Action Plan for Europe 2004</p>
EU	<p>Together for Health: A Strategic Approach for the EU (2007)</p> <p>The European Environment and Health Action Plan 2004-2010</p> <p>EU Sustainable Development Strategy (EU SDS) First issued 2001, Revised 2006 and reviewed in 2009</p> <p>Directive 2013/30/EU on safety of offshore oil and gas operations and amending Directive 2004/35/EC</p>
UK	<p><i>Sustainable Communities Act 2007</i></p> <p><i>The Localism Act 2011</i></p> <p><i>The Health and Safety at Work etc Act 1974 (Application outside Great Britain) Order 2013</i></p> <p><i>The Offshore Installations (Offshore Safety Directive) (Safety Case etc.) Regulations 2015</i></p> <p><i>The Offshore Petroleum Licensing (Offshore Safety Directive) Regulations 2015</i></p> <p>Marine Policy Statement (2011)</p> <p>Mainstreaming sustainable development: the government's vision and what this means in practice (2011)</p> <p>The Strategy for Health and Safety in Great Britain in the 21st Century (2009), and One year On : Being part of the solution (2010)</p> <p>Our Seas – a shared resource. High level marine objectives (2009)</p> <p>Equity and Excellence: Liberating the NHS (2010)</p> <p>Health Effects of Climate Change in the UK (2012)</p>
Local	<p><i>Health and Social Care Act 2012 (as amended) - England</i></p> <p>National Planning Policy Framework (2012) - England</p> <p>East Inshore and Offshore Marine Plans (2014) - England</p> <p>South Inshore and Offshore Marine Plans (ongoing) - England</p> <p><i>National Health Service (Wales) Act 2006 (as amended)</i></p> <p><i>Social Services and Well-being (Wales) Act 2014</i></p> <p><i>Well-being of Future Generations (Wales) Act 2015</i></p> <p><i>Planning (Wales) Act 2015</i></p> <p>One Wales: One Planet, a new Sustainable Development Scheme for Wales (2009)</p> <p>Technical Advice Note 16: Sport, Recreation and Open Space (2009) - Wales</p> <p>The sustainable development charter (2010) - Wales</p> <p>The Programme for Government: Welsh Assembly Government (2011)</p> <p>Together for Health A Five Year Vision for the NHS in Wales (2011) and Working differently – working together (2012)</p> <p>Welsh National Marine Plan (ongoing)</p> <p>Wales Spatial Plan – People, Places, Futures (2004, updated 2008)</p>

Local	<p><i>Public Health etc. (Scotland) Act 2008</i> (as amended)</p> <p><i>Public Services Reform (Scotland) Act 2010</i></p> <p>Choosing Our Future: Scotland's Sustainable Development Strategy (2005)</p> <p>The Healthcare Quality Strategy for NHS Scotland (2010)</p> <p>The Government Economic Strategy (2011)</p> <p>Scottish Planning Policy (2014) and the National Planning Framework for Scotland 3 (2014)</p> <p>Scotland's National Marine Plan (2015)</p> <p><i>Health and Social Care (Reform) Act (Northern Ireland) 2009</i> (as amended)</p> <p>PPS 8: Open Space, Sport and Outdoor Recreation (2004) - Northern Ireland</p> <p>Everyone's Involved: the Northern Ireland Sustainable Development Strategy (2010)</p> <p>Making Life Better: Strategic Framework for Public Health 2013-2023 (2014) - Northern Ireland</p> <p>The Marine Plan for Northern Ireland (ongoing)</p>
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A2.8.1 Key Objectives and Targets

It is acknowledged in The European Environment and Health Strategy that there are potential health implications from environmental impacts, and seeks to make the connection between health and environmental conditions. The plan also has the aim of maximising the economic benefits of good health, recognising that these often outweigh the cost of remedial action. At the UK and UK constituent country level, health is considered in the context of sustainable development and initiatives attempt to address health inequalities, for instance the gap in infant mortality across social groups, and the difference in life expectancy in disadvantaged areas compared with those that are more prosperous. Additionally, at the national and regional planning policy level, human health is a sectoral consideration in the MPS, for instance in relation to fisheries, aquaculture and safe operation of offshore facilities, and the improvement of health and social well-being is an objective of the East Marine Plans and a specific policy in support of proposals which provide such benefits in included.

A2.8.2 Implications for SEA

The SEA considers the implications of the plan/programme in the context of regional and UK initiatives designed to improve general health and well-being and reduce inequalities brought about by social and environmental deprivation. The SEA considers how the plan/programme contributes to government targets in relation to environmental degradation (e.g. air quality, landscape quality) which has associated potential physical and mental health implications.

A2.9 Other Users and Material Assets

Other Users & Material Assets	
International	<p>Convention on International Civil Aviation (Chicago Convention) 1944 The London Convention (1972) Marine Pollution Convention, MARPOL 73/78 (the International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978) United Nations Convention on the Law of the Sea (1982) Basel Convention of the control of transboundary movements of hazardous waste and their disposal (1992) FAO Code of Conduct for Responsible Fisheries (1995) UN Fish Stocks Agreement (2001) Nairobi International Convention on the Removal of Wrecks (2007) The Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships (2009)</p>
Regional	<p>Convention on the Future Multilateral Cooperation in North-East Atlantic Fisheries (NEAFC) (1982) Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR) (1992) OSPAR Decision 98/3 on the disposal of disused offshore installations (1998) North Seas Countries' Offshore Grid Initiative (2010)</p>
EU	<p>Council Directive 99/31/EC of April 1999 on the landfill of waste (as amended) (the Landfill Directive) EC Directive on Port Reception Facilities 2000/59/EC Directive 2005/33/EC amending Directive 1999/32/EC as regards the sulphur content of marine fuels Freight logistics in Europe - the key to sustainable mobility (2006) Commission Regulation (EC) No 1013/2006 on shipments of waste and amending Regulation (EC) No 1013/2006 Regulation (EC) No 1692/2006 of the European Parliament and of the Council of 24 October 2006 establishing the second Marco Polo programme for the granting of Community financial assistance to improve the environmental performance of the freight transport system (Marco Polo II) and repealing Regulation (EC) No 1382/2003 (follow-up to Marco Polo II is presently being established) The Treaty of Lisbon (2007) EU Integrated Maritime Policy (2007) Commission Regulation (EC) No 1418/2007 concerning the export for recovery of certain waste listed in Annex III or IIIA to Regulation (EC) No 1013/2006 to certain countries to which the OECD Decision on the control of transboundary movements of wastes does not apply and amending Regulation (EU) No 733/2014 Commission Regulation (EC) No 740/2008 amending Regulation (EC) No 1418/2007 as regards the procedures to be followed for export of waste to certain countries Directive on Waste 2008/98/EC and Decision 2000/532/EC on hazardous waste Commission Regulation (EC) No 669/2008 on completing Annex 1C of Regulation (EC) No 1013/2006 on shipments of waste EU Energy Security and Solidarity Action Plan: Second Strategic Energy Review - Securing our Energy Future (2008) Communication on Offshore Wind Energy: Action needed to deliver on the Energy Policy Objectives for 2020 and beyond. COM(2008)768 Communication on the Directive 2004/67/EC concerning measures to safeguard security of natural gas supply (2008) EC Roadmap on Maritime Spatial Planning: Achieving Common Principles in the EU (2008) Regulation (EC) No 1342/2013 establishing a long-term plan for cod stocks Directive 2009/28/EC on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC Energy 2020: A strategy for competitive, secure, and sustainable energy (2010) Marine and Maritime Agenda for Growth and Jobs, The Limassol Declaration (2012) Decision No 884/2004/EC amending Decision No 1692/96/EC on community guidelines for the development of the trans-European transport network</p>

EU

Maritime Transport Strategy 2018 (2009)
 European Transport Policy (2001-2011)
 Roadmap to a Single European Transport Area - Towards a competitive and resource efficient transport system (2011)
 Regulation (EU) No 1380/2013 on the Common Fisheries Policy
 Directive 2013/30/EU on safety of offshore oil and gas operations and amending Directive 2004/35/EC
 Directive 2014/89/EU on establishing a framework for maritime spatial planning
 European Maritime and Fisheries Fund (2014)
 Innovation in the Blue Economy: realising the potential of our seas and oceans for jobs and growth COM(2012) 494 final, COM(2014) 254 final/2 and Marine Knowledge 2020: roadmap
 European Commission Communication: A Framework Strategy for a Resilient Energy Union with a Forward-Looking Climate Change Policy (2015)
 EC Trans-European Transport Network (TEN-T) programme
 Projects of common interest (PCI)

UK

The Merchant Shipping and Fishing Vessels (Port Waste Reception Facilities) (Amendment) Regulations 2009
Sea Fisheries (Shellfish) Act 1967 (as amended)
Sea Fish (Conservation) Act 1967 (as amended)
Fisheries Act 1981
Energy Act 2008
Marine and Coastal Access Act 2009
The Energy Act 2008 (Consequential Modifications) (Offshore Environmental Protection) Order 2010
Wreck Removal Convention Act 2011
The Exclusive Economic Zone Order 2013
The Territorial Sea (Baselines) Order 2014
The Offshore Installations (Offshore Safety Directive) (Safety Case etc.) Regulations 2015
The Offshore Petroleum Licensing (Offshore Safety Directive) Regulations 2015
Harbours Act 1964
 The Renewables Obligation (introduced 2002)
 Contracts for Difference
 National Fisheries Policy: Fisheries 2027 (Defra 2007)
 The strategic importance of the marine aggregate industry to the UK (2007)
 UK Ship Recycling Strategy (2007)
 Our Seas - A Shared Resource. High Level Marine Objectives (2009)
 Round 3 offshore wind leasing (2009)
 The UK Marine Policy Statement (2011)
 The Carbon Plan: delivering our low carbon future (2011)
 Creating growth, cutting carbon: making sustainable local transport happen (2011)
 Concordat on management arrangements for fishing quotas and licensing in the UK (2012)
 CCS Roadmap: Supporting deployment of Carbon Capture and Storage in the UK (2012)
 UK renewable energy roadmap (updated 2013)
 The Wood Review on maximising economic recovery from the UKCS (2013) and related Government response
 Strategy for Maximising Economic Recovery of Offshore UK Petroleum (2016)
 27th (2012) and 28th (2014) Seaward Oil and Gas Licensing Rounds
 Contracts for Difference (introduced 2015)
 Next Steps in CCS: Policy Scoping Document (2015) - England and Wales
 The Aviation Plan (2008, updated 2015)

Inshore Fishing (Scotland) Act 1984
Sea Fisheries (Shellfish) Amendment (Scotland) Act 2000
The Marine (Scotland) Act 2010
The Aquaculture & Fisheries (Scotland) Act 2013
Scottish Marine Regions Order 2015
 Strategic Framework for Inshore Fisheries in Scotland (2005) and Inshore Fisheries Groups
 National Transport Strategy (2006) - Scotland
 A Fresh Start: The Renewed Strategic Framework for Scottish Aquaculture (2009)
 Scotland's Zero Waste Plan (2010)
 Scottish Government: The Carbon Capture and Storage Roadmap (2010)
 Blue Seas - Green Energy: A Sectoral Marine Plan for Offshore Wind Energy in Scottish Territorial Waters (2011)
 Scotland's Sectoral Marine Plans for Offshore Wind, Wave and Tidal Energy in Scottish Waters
 A Strategic Plan for Scotland's Marine Tourism Sector (2014)
 Scotland's National Marine Plan (2015)
 Draft Pentland Firth and Orkney Waters Marine Spatial Plan and adopted Shetland Marine Plan
 Scottish Government Oil and Gas Strategy 2012-2020

Marine Act (Northern Ireland) 2013
The Sea Fishing (Licenses and Notices) Regulations (Northern Ireland) 2014
 Tourism Strategy for Northern Ireland to 2020 and the Programme for Government 2011-2015 (2010)
 Offshore Renewable Energy Strategic Action Plan 2012-2020 and Offshore Wind and Marine Renewables Energy SEA Environmental Report (2012) - Northern Ireland
 Sustainable Energy Action Plan 2012-2015 and beyond (2012) - Northern Ireland
 Envisioning the Future: Considering Energy in Northern Ireland to 2050 (2013)
 Delivering Resource Efficiency: the revised Northern Ireland Waste Management Strategy (2013)
 The Marine Plan for Northern Ireland (ongoing)

Waste (England and Wales) Regulations 2011
The Scallop Fishing (England) Order 2012
Inshore Fisheries and Conservation Authorities bylaws
 Sea Angling 2012 project - England
 National Policy Statements for Energy (2011): England and Wales
 Overarching National Policy Statement for Energy (EN-1)
 National Policy Statement for Renewable Energy Infrastructure (EN-3)
 National Policy Statement for Gas Supply Infrastructure and Gas and Oil Pipelines (EN-4)
 National Policy Statement for Ports (2012) - England and Wales
 The National Planning Policy Framework (2012) - England
 Waste prevention programme for England (2013)
 East Inshore and Offshore Marine Plans (2014) - England
 South Inshore and Offshore Marine Plans (ongoing) - England

Technical Advice Note 8: Renewable Energy (Wales) - does not cover offshore elements of a development, but makes mention of any associated infrastructure that takes place on land
 Coastal Tourism Strategy for Wales (2008)
 Technical Advice Note 13: Tourism (Wales)
 Wales Freight Task and Finish Group and related reports (latest 2013)
 Marine Renewable Energy Strategic Framework (2007-2011)
 Coastal tourism strategy (2008) - Wales
 The Wales Transport Strategy (2008)
 Towards Zero Waste: The Overarching Waste Strategy Document for Wales (2010)
 Energy Wales: a low carbon transition (2012)
 Wales Marine and Fisheries Strategic Action Plan (2013)
 Draft National Transport Plan for Wales (2015)
 Welsh National Marine Plan (ongoing)
 Wales Spatial Plan – People, Places, Futures (2004, updated 2008)

A2.9.1 Key Objectives and Targets

The *Marine and Coastal Access Act 2009* is intended to simplify and strengthen strategic management of the marine environment by enabling economic, social and environmental impacts and objectives to be considered simultaneously. A key objective of the Act is to implement a nationwide system of marine planning that will clarify marine objectives and priorities for the future, and direct decision-makers and users towards more efficient, sustainable use and protection of marine resources. The MPS was jointly adopted in March 2011 by the UK Government, Scottish Government, Welsh Government and the Northern Ireland Executive and applies to all UK waters. The MPS provides an overarching framework within which regional marine plans are presently being drafted. The Act established the Marine Management Organisation (MMO) with responsibility for marine plan making covering English territorial and offshore waters on behalf of the UK Government. There are 11 marine plan areas within English inshore and English offshore regions and marine plans have been prepared for two of these, the East Inshore and Offshore plans (also see Section 2.3). The South Inshore and Offshore plans are presently being prepared and are due to be subject to consultation in spring 2016. In Scotland, Wales and Northern Ireland, plan making is being taken forward by the devolved administrations. The Scottish National Marine Plan was adopted in March 2015 and subsequent regional planning has been proposed for a further 11 inshore areas (with Shetland and Pentland Firth & Orkney Waters plans adopted or ongoing respectively). Other devolved plans are still in development.

The marine licensing regime for a number of activities (generally excluding oil & gas, and gas storage) underwent changes resulting from the *Marine and Coastal Access Act 2009*. In considering the need for coordination with regard to marine spatial planning, the responsibilities of the devolved administrations also need to be accounted for. The territorial and offshore waters of Scotland, territorial waters of Wales and Northern Ireland are variously the remit of Scottish, Welsh and Northern Irish Ministers respectively. NRW and MMO are the responsible authorities for issuing marine licences for a range of activities in Welsh and English waters respectively (note that Section 36 consent for marine renewable arrays of <100MW remains with the MMO for Welsh waters), including being the Marine Plan authorities for these areas, therefore a high level of spatial coordination may be expected. With regards to the NSIP process (renewable arrays of >100MW), the MMO, NRW (for those provisions under Part 4 of the *Marine and Coastal Access Act*) and DECC are variously the licensing/consenting authorities. It should be noted that the Planning Inspectorate (PINS) may be the examining authority with regards to NSIPs, NRW and the MMO have a number of roles in the consideration of projects relevant to them, including as a statutory consultee, interested party and also for marine licensing. On granting a Development Consent Order, the MMO/NRW is then responsible for enforcement⁹, post-consent monitoring, and varying, suspending or revoking any marine licence¹⁰. In addition to the regulatory regime which provides the framework for consenting, planning policy is variously covered by the MPS, NPSs for energy, marine plans, and a range of terrestrial policy including the NPPF and Planning Policy Wales. In Scotland, Marine Scotland is the relevant authority with marine planning and policy responsibilities, and in Northern Ireland, the NIEA is the licensing and enforcement authority (as part of the Department of the Environment) for devolved matters.

⁹ Note that enforcement functions under Part 4 of the *Marine and Coastal Access Act* were not delegated to NRW and remain with Welsh Ministers, see: <http://infrastructure.planninginspectorate.gov.uk/wp-content/uploads/2013/04/Advice-note-11-Annex-A-CCW.pdf>

¹⁰ <https://www.gov.uk/government/collections/marine-licensing-nationally-significant-infrastructure-projects>

Planning decisions relating to activities taking place in the marine environment are now made in the context of the MPS, the first step in marine spatial planning for the UK made under provisions in the Marine and Coastal Access Act 2009. Subsequent stages of marine planning involve the creation of a series of Marine Plans, with regionally specific policies which are in keeping with the MPS. The first of these, the East Inshore and Offshore Marine Plans were adopted in 2014 and the second set, the South Inshore and Offshore Marine Plans are expected to be consulted upon in 2016. The devolved administrations have (Scotland) or are in the process of (Northern Ireland and Wales) producing their own national marine plans.

A significant fraction of renewable energy generation in the next 10 years will come from offshore wind and other marine renewables as they are increasingly deployed and become more technically and economically feasible, and the UK has a legally binding target to produce 15% of its energy from renewable sources by 2020. These will help deliver part of the government targets to reduce carbon dioxide equivalent emissions (34% on 1990 levels by 2020) and increase renewable energy deployment (30% of electricity by 2020). Devolved Governments have also released a number of documents outlining their commitment to transitioning to low carbon energy production, such as the Welsh Assembly Government Marine Renewable Energy Strategic Framework, Scotland's Sectoral Marine Plans for Offshore Wind, Wave and Tidal Energy in Scottish Waters, and the Northern Ireland Renewable Energy Strategic Action Plan. The UK Government Renewable Energy Roadmap sets out what is required to achieve the desired (and legally binding) renewables targets, including both the role of Government, and Individuals and businesses, progress on renewable technologies and priority actions.

Within the UK, sources of CO₂ are clustered around a relatively few centres of significant industrial activity; Thames Estuary, Humberside, Merseyside, the Firth of Forth and Teesside and Tyneside. The Office of Carbon Capture and Storage (OCCS) was formed within DECC and is responsible for setting the longer term strategy for wider deployment to 2030 through its UK CCS roadmap.

While reliance on fossil fuel sources will continue during the decarbonisation of energy supply industry (including through CCS), the UK is now a net importer of both oil and gas. Since 2000, UK domestic gas supply has declined at an average rate of 8% per year, with net imports commencing in 2004, and similarly, UK oil production has been in decline since a peak in 1999, with net imports of oil commencing in 2005. In 2014, imports met approximately 48% of the UK's oil and gas demand.

Despite these declines, the UK remains the largest producer of oil and gas in the EU, and successive oil and gas licensing rounds attract significant interest – the 27th Round attracted the highest number of applications since licensing began, and the most recent 28th Round attracted the third largest number. Reductions in the recent production and exploration of the UKCS sector led to the Wood Review in 2013, which set out a number of recommendations that were accepted by Government, including maximising economic recovery, and the creation of the Oil & Gas Authority (OGA), an executive agency of DECC which was formally established in April 2015. The OGA has responsibilities including oil and gas licensing, exploration and production, fields, wells and other infrastructure, and CCS licensing, but note that the statutory provisions transferring the functions to OGA is included in the current 2015/16 *Energy Bill* (see Schedule 1) which at the time of writing is yet to receive Royal Assent. 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. This resulted in the Maximising Economic Recovery (MER) UK Strategy which sets out a central obligation (effectively that relevant persons must take all steps necessary to secure that the maximum

value of economically recoverable petroleum is recovered) and a number of supporting obligations and actions. The MER UK Strategy will be supported by a number of other amendments to the *Petroleum Act 1998*, to be enacted through the 2015/16 *Energy Bill* in due course. Amendments which may arise from this Bill on Royal Assent also include provisions relating to rights to use upstream petroleum infrastructure (Part 3), decommissioning of installations (Part 3 and Schedule 2) and fees for activities relating to oil, gas, carbon dioxide and pipelines (Part 4). Additional provisions relate to Electricity Act consent and the closure of the Renewables Obligation for onshore wind (Part 5).

A linked factor in enhancing security of supply is the need for more gas storage capacity, since until recently seasonal fluctuations in UK gas demand were met by varying production rates from UK fields. Gas storage in the UK is comparatively smaller when compared to wider Europe, as supply has to date been dominated by domestic supply and an abundance of import infrastructure. Whilst new gas import infrastructure may be constructed, domestic gas supply has been in decline in recent years, which is enhancing import dependency, which could reach 90% by 2035. There are a small number of gas storage facilities in the UK, most of which are located onshore (see Appendix 1h), with one operational offshore facility (Rough) and others proposed (Gateway, Deborah). These facilities collectively have approximately 4.8 billion cubic metres (Bcm) of storage capacity and a delivery rate of 154 million cubic metres per day (mcm/day). The latest UK risk assessment of security of gas supply indicates that there has been a 25% increase in gas storage capacity in the past 10 years and that potential storage sites with planning permission could at least double current capacity (those in-planning or with planning permission have a combined capacity of approximately 7.8Bcm). The National Grid Gas Ten Year Statement is published by National Grid annually as System Operator and Transmission Owner of the gas National Transmission System (NTS). The statement sets out how it is planned to operate the NTS over the next 10 years.

Since the accident involving the Deepwater Horizon semi-submersible in the Gulf of Mexico and subsequent problems in both stemming the flow of oil from the open well and adverse environmental and socio-economic impacts, the UK Government instigated a review to put into context the present regulatory and safety procedures which ensure that the UK oil and gas sector operates appropriately. A number of steps were initiated including the recruitment of additional offshore environmental inspectors with a view to doubling the number of annual inspections on drilling rigs, a review of the indemnity insurance requirements of operating on the UKCS (see DECC guidelines on the demonstration of financial responsibility), and the establishment of an industry trade association (The Oil Spill Prevention and Response Advisory Group) by Oil and Gas UK which assessed and reported on the strengths and weaknesses in how the UK would respond to such an incident in its waters. This body included representatives from both industry and the regulators. Furthermore, in response to the Deepwater Horizon incident, the EU adopted a Directive on safety of offshore oil and gas operations (the offshore safety directive) in 2013 which seeks to reduce as far as possible the occurrence of major accidents related to offshore oil and gas operations. The majority of its provisions are covered by existing UK instruments, however new secondary legislation (*The Offshore Installations (Offshore Safety Directive) (Safety Case etc.) Regulations 2015*, *The Offshore Petroleum Licensing (Offshore Safety Directive) Regulations 2015*) and amendments to other Regulations including in relation to environmental liability have been made to transpose the Directive. The Directive came into force on 19th July 2015.

In order to implement the same environmental regulations which apply to the oil and gas industry to the storage and offloading of combustible gas, and the storage of CO₂ (i.e. those activities licensed under the *Energy Act 2008*), the *Energy Act (Consequential Modifications) (Offshore Environmental Protection) Order 2010* was made. This instrument ensures that regulations including 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), Offshore Combustion Installations (Pollution Prevention and Control) Regulations 2013 and the Offshore Marine Conservation (Natural Habitats, &c) (Amendment) Regulations 2010 apply to these new types of development.

Shipping and port activity has expanded considerably in recent years, particularly since the introduction of the tonnage tax in 2000, and will remain the principal means by which the UK exchanges goods. Ships, though emitting less CO₂ per tonne of goods transported than other methods of bulk transport, represent a significant source of anthropogenic gaseous and particulate emissions, and these emissions though presently largely unregulated, will need to be accounted for in the coming years. The National Policy Statement for Ports was published in 2012, which outlines the framework for decision making in relation to nationally significant port developments in England and Wales, and recognises the strategic role of UK ports in the in movement of goods.

UK fisheries have reduced in recent years in part due to declining fish stocks and resulting management techniques including catch and effort management. *The Marine and Coastal Access Act* aims to strengthen fisheries and environmental management protection. Inshore fisheries management is now handled by Inshore Fisheries and Conservation Authorities (IFCAs), which replaced Sea Fisheries Committees. IFCAs are responsible for activities out to 6nm from the coast and in estuaries where they will be responsible for sea fisheries management. In Scotland, Marine Scotland has a number of roles including marine research, marine policy and regulatory functions.

A2.9.2 Implications for SEA

The SEA takes into account the interaction of the plan/programme and its alternatives with the present (e.g. safety of navigation, recreation interests including sailing and surfing), and possible future use of the marine environment (e.g. use of areas for hydrocarbon gas and CO₂ storage and marine renewables) and the various management and regulatory regimes which control their activities. The SEA also considers how the programme may contribute to government targets such as renewable energy generation, security of energy supply and reductions in greenhouse gases.

A2.10 Cultural Heritage

Cultural Heritage	
International	<p>UNESCO Convention Concerning the Protection of the World Cultural and Natural Heritage (1972) Convention on the Protection of Underwater Cultural Heritage (2001) United Nations Convention on the Law of the Sea (UNCLOS)</p>
Regional	<p>World Heritage Convention 1972 Tentative list of possible future world heritage nominations (2012-2014)</p>
Europe	<p>Council of Europe, European Convention on the Protection of the Archaeological Heritage 1992, the 'Valetta Convention' Council of Europe, European Landscape Convention 2000 European Marine Board Continental Shelf Prehistoric Research Position and Policy Brief (2014) Towards an integrated approach to cultural heritage for Europe COM(2014) 477 final</p>
UK	<p><i>Protection of Military Remains Act 1986</i> <i>Ancient Monuments and Archaeological Areas Act 1979</i> <i>National Heritage Act 2002</i> <i>Marine and Coastal Access Act 2009</i> <i>The Protection of Military Remains Act 1986 (Designation of Vessels and Controlled Sites) Order 2009</i> <i>The Protection of Military Remains Act 1986 (Designation of Vessels and Controlled Sites) Order 2012</i> Marine Policy Statement (2011) North Sea Prehistory Research and Management Framework (2009)</p>
Local	<p><i>Protection of Wrecks Act 1973</i> - England, Wales and Northern Ireland <i>National Heritage Act 1983</i> (as amended) - England <i>Treasure Act 1996</i> - England and Wales <i>Planning (Listed Buildings and Conservation Areas) Act 1990</i> - England and Wales <i>National Heritage Act 2002</i> (as amended) - England English Heritage: Climate Change and the Historic Environment (2008) English Heritage: Conservation Principles, Policies and Guidance for Sustainable Management of the Historic Environment (2008) East Inshore and Offshore Marine Plans (2014) - England South Inshore and Offshore Marine Plans (ongoing) - England National Planning Policy Framework (2012) Heritage 2020 (2015) Historic England's Action Plan 2015-2018 (2015) English Heritage: Strategic Environmental Assessment, Sustainability Appraisal and The Historic Environment (2013) Historic Environment Good Practice Advice in Planning Note 2: Managing Significance in Decision-Taking in the Historic Environment (2015) DCLG Conserving and enhancing the historic environment (2014) - England Marine Aggregate Levy Sustainability Fund (MALSF) Regional Environmental Characterisations including : South Coast, Thames, East Coast and the Humber areas. <i>Historic Environment (Wales) Bill</i> Conservation Principles for the sustainable management of the historic environment in Wales (2011) A Research Framework for the Archaeology of Wales (2011) Historic Environment Strategy for Wales (2013) Planning Policy Wales Edition 7 (2014) Welsh National Marine Plan (ongoing)</p>

Planning (Listed Buildings and Conservation Areas) (Scotland) Act 1997
Marine (Scotland) Act 2010
The Historic Environment Scotland Act 2014
 Scottish Natural Heritage: Natural Heritage Futures (2002, updated 2009)
 Scottish Historic Environment Policy (2009, updated 2011)
 Scotland's Historic Environment Audit (2014)
 Scottish Planning Policy (2014) and the National Planning Framework for Scotland 3 (2014)
 Scotland's National Marine Plan (2015)
 Historic Scotland's Marine Heritage Strategy 2012-2015

The Planning (Northern Ireland) Order 1991
The Historic Monuments and Archaeological Objects (Northern Ireland) Order 1995
Marine Act (Northern Ireland) 2013
 Planning Policy Statement 6: Planning, Archaeology and The Built Heritage (Northern Ireland) (1999) and 2005 addendum
 The Marine Plan for Northern Ireland (ongoing)

A2.10.1 Key Objectives and Targets

International protection of marine heritage features is provided by Articles 149 and 303 of United Nations Convention on the Law of the Sea (UNCLOS), and more recently the Convention on the Protection of Underwater Cultural Heritage (CPUCH). Though the UK is not a signatory of the latter, the convention received acceptance or ratification of the minimum number of 20 states on 2nd October 2008 and entered into force on 2nd January 2009. The CPUCH covers those archaeological, historical or cultural items which have been, 'partly or completely under water, periodically or continuously, for at least 100 years', which includes not only shipwrecks but buildings, artefacts, human remains, aircraft, cargo and prehistoric items. A central tenet of the Convention is that underwater heritage is preserved *in situ*.

At present, the principal form of marine heritage protection in the UK is for that of shipwreck, provided by the *Protection of Wrecks Act 1973* and the *Protection of Military Remains Act 1986*. These seek to protect either wrecks or wreck sites that contribute to the understanding of the past on account of their historical, archaeological or artistic importance, or vessels or aircraft which appear to have become sunk or stranded while in military service.

The *Marine and Coastal Access Act 2009* has a number of provisions in relation to the historic environment, including consideration of historic or archaeological sites within the grounds for designating MCZs. The *Marine (Scotland) Act 2010* allows Scottish Ministers to designate Historic Marine Protected Areas in Scottish territorial waters (i.e. out to 12nm). These designations have been used to cover all wrecks in Scottish waters formerly designated under the *Protection of Wrecks Act 1973*, which is not repealed in Scotland. Military remains will remain within the remit of the *Protection of Military Remains Act 1986*. Although Scottish territorial waters are not within the remit of this SEA (with the exception of for gas storage and oil and gas licensing), landfall locations and offshore developments may take place within close proximity to territorial limits. For the purposes of the *Marine (Scotland) Act* historic assets may include:

- a vessel, vehicle or aircraft (or a part of a vessel, vehicle or aircraft), or its remains
- an object contained in, or formerly contained in, a vessel, vehicle or aircraft
- a building or other structure (or a part of a building or structure)
- a cave or excavation
- a deposit or artefact (whether or not formerly part of a cargo of a ship) or any other thing which evidences, or groups of things which evidence, previous human activity

Under the reform of heritage protection, the Scottish Government released a policy document in 2008 which consolidated the Scottish Heritage Protection Policy series of reports. The 2011 update of the Scottish Historic Environment Policy (SHEP) takes account of the *Marine (Scotland) Act* and the *Historic Environment Scotland Act 2011*. The SHEP document covers both statutory and non-statutory designations, and includes a number of annexes providing criteria and guidance on scheduling, listing and conservation areas, as well as information on listed building consent and associated planning permission process.

Historic England (formerly English Heritage) has produced an Action Plan for 2015-2018, being its contribution to Heritage 2020 and the successor to the previous National Heritage Protection Plan (2012, updated 2013). The Action Plan sets out how Historic England's overarching corporate plan objectives will be achieved, and how they relate to the strategic priorities of Heritage 2020. A number of outcomes in the plan relate to enhancing knowledge and better informing marine decision making (e.g. through the marine planning system).

English Heritage commissioned the Centre for Maritime Archaeology at the University of Southampton to co-ordinate the development of a Maritime and Marine Historic Environment Research Framework, which was published in 2011¹¹. The framework is intended to inform future management, policy and planning for the marine historic environment, and provide research priorities for which funding may be sought.

A2.10.2 Implications for SEA

The SEA considers the potential effects of plan/programme activities on coastal and marine heritage features, including on landscape/seascape and setting. A range of guidance and best practice advice has been published in recent years. In response to an increasing number of finds by the dredging industry, guidance was published on the actions to be taken on discovery of military aircraft at sea by Wessex Archaeology in 2008. The wider concern of interactions between offshore industry (particularly renewables) and the marine archaeological resource, has led to the development of a series of guidance documents by Wessex Archaeology in 2007, through COWRIE in 2008 and 2011, and more recently English Heritage in 2013. The SEA highlights this guidance and best practice in relation to the historic environment and marine energy developments (e.g. Gribble & Leather 2011).

¹¹ Also see Jesse *et al.* (2013). *People and the Sea: A Maritime Archaeological Research Agenda for England*, York, GB, Council for British Archaeology, 272pp.