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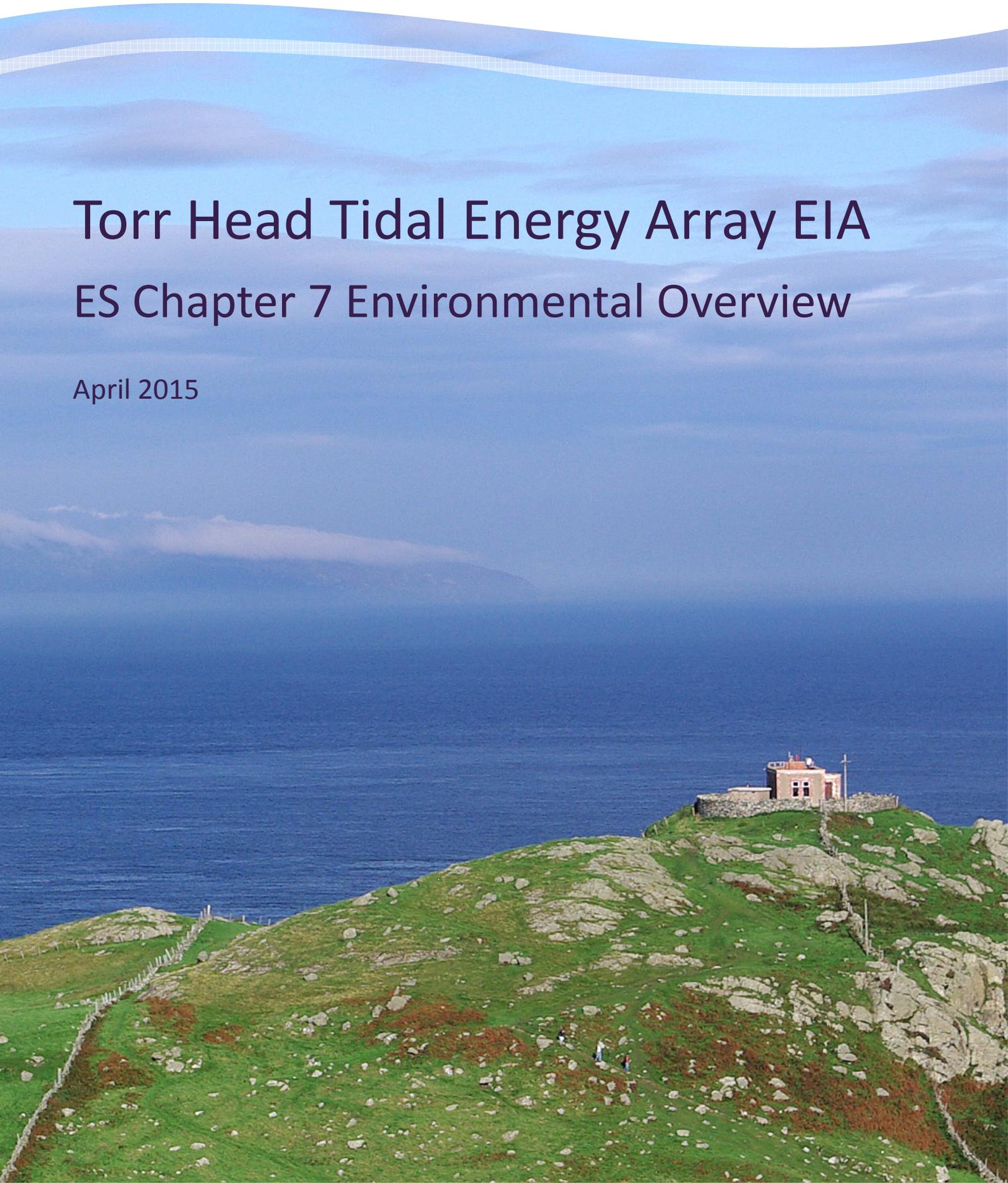


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GROUP

Torr Head Tidal Energy Array EIA

ES Chapter 7 Environmental Overview

April 2015



7 ENVIRONMENTAL OVERVIEW

7.1 Introduction

This chapter provides an overview of the environment in which the Project will be developed. Detailed descriptions of specific aspects of the environment are provided in the topic specific chapters of the Environmental Statement (ES) (Chapters 9 to 20).

7.2 Physical characteristics

7.2.1 Coastal processes and seabed conditions

The AfL area lies off Torr Head on the western edge of the North Channel, which is the stretch of water that separates the coast of Antrim in Northern Ireland with the Kintyre peninsula in Scotland. The North Channel is approximately 30 km wide and extends north south from Rathlin Island to the Isle of Man.

The North Channel is typically between 100 to 200 m in depth, reaching depths of up to 280 m in places. Along the Antrim coast, deeper waters are only found inshore at Torr Head where water depths range from 30 m to 110m. The average depth across the AfL area is approximately 60 m. Shallowest water depths (approximately 35 m depth) are located towards the north-eastern corner of the AfL area with the deepest sections (approximately 90 m and 110 m) found along the north and south-eastern edges of the AfL area. Water depths within the area of search for the export cable corridor decrease steadily from the coastline down to a depth of approximately 50 m at the edge of the AfL area.

The seabed morphology and sediment distribution of the Irish Sea and North Channel is due mainly to the interaction of historic glacial processes and subsequent exposure to tidal currents, waves and storms. The seabed within the AfL area is primarily composed of continuous irregular rock outcrop, interspersed with boulders and cobbles whereas the area of search for the export cable corridor contains more variable seabed, including areas of exposed bedrock, coarse gravels, sandy gravels and small areas of sand megaripples.

Being located on the east coast of Northern Ireland the AfL area is shelter from the large swell waves that are generated across the North Atlantic Ocean and arrive from a west-northwesterly direction. The Scottish mainland provides further shelter from waves coming from the north and east. Consequently significant wave height within the AfL area rarely exceeds 2 m.

The semi-diurnal tide is the dominant physical process around the AfL area, flooding into the Irish Sea from the Atlantic Ocean through the North Channel in the north and St. George's Channel in the south. Peak depth-averaged mean spring current speeds can approach 3 m/s through the North Channel on the coastal edges, while peak depth-averaged mean neap currents approach 1.5 m/s (BERR, 2008b).

There are a number of sites within 10 km of the AfL area designated as areas of national geological importance, including the adjacent Torr Head Area of Special Scientific Interest (ASSI) and the Fair Head and Murlough Bay ASSI.

7.2.2 Water environment

Northern Ireland has over 650 km of coastline. The waters off this coastline support a wealth of biodiversity and are important sources of recreation and employment in particular with regard to fishing and shipping (AFBI, 2011). Over recent years there have been significant decreases in the levels of contaminants in marine sediments. This is mainly as a result of improved practices, better environmental regulation and a decline some of the most polluting historical industries. These reductions in levels of contaminants in marine sediments has a positive effect on the environment in particular marine wildlife and shellfish. There are no known or potential areas of contamination within the Project area (AfL area and export cable corridor area of search). There are also no designated shellfish waters in the Project area. The closest designated bathing water is at Ballycastle, approximately 11.5 km west of the AfL area.

7.3 Biological characteristics

7.3.1 Benthic and intertidal ecology

The seabed around Northern Ireland can be broadly characterised into three types of sediment: mixed coarse ground (mixture of bedrock, cobble, pebble and gravel), sands and soft mud. Results from the desk-based study, review of available geophysical data for the Project area (Joint Irish Bathymetric Survey (JIBS) database) and dedicated benthic survey undertaken in the Project area indicates that the predominant habitat type within the AfL area is cobbles and boulders over bedrock. Within the area of search for the export cable corridor, the habitat is mainly coarse sand and pebbles with patches of sand with fine gravels towards Loughan Bay and areas of cobbles and boulders towards the AfL area.

In total 38 species were recorded in the Project area, the majority of which are characteristic of rocky surfaces, reflecting the coarse rocky nature of the seabed. Over the majority of the survey area, the surfaces of the rock and boulders present were covered in a faunal turf consisting of a diverse range of hydroids, bryozoans and sponges. Other fauna such as starfish, sea urchins and sea cucumbers were also present.

7.3.2 Marine mammals

A number of desk based studies and 12 months of marine wildlife surveys (Torr Head seabird and marine mammal surveys July 2013 to June 2014, NPC, 2014) were carried out to establish the presence of cetaceans and pinnipeds in the Project area. The desk study revealed that 15 species of cetacean have been observed in the vicinity of the Project although most are not considered regular visitors. The desk studies and marine mammal surveys confirmed harbour porpoise, bottlenose dolphin and minke whale to be the most frequently occurring cetacean species in the Project area. Two pinniped species, the grey and harbour seal were also recorded in the Project area, albeit in low numbers.

All cetaceans are protected under Annex IV of the EU Habitats Directive. Bottlenose dolphin, harbour porpoise, harbour seal and grey seal are also protected under Annex II of the Habitats Directive, which requires the designation of Special Areas of Conservation (SAC) for the species. The nearest SAC to the Project area where marine mammals are a qualifying interest is the Skerries and Causeway SAC which lies approximately 25 km north west of the AfL area. Harbour porpoise are a qualifying interest of this site.

7.3.3 Birds

In total, 24 species of seabird were recorded in the vicinity of the Project area during the dedicated bird and marine mammal surveys (NPC, 2014). Of these 17 were present in the AfL area, and 12 were classified as species that regularly dive to depths below 8 m. The majority of birds recorded during the surveys were in flight and were not present on the water surface.

Overall, the number of birds recorded during the surveys were low for all species indicating that the Project area is not a key foraging area for seabirds. Guillemot and razorbill were the most frequently recorded species, with numbers peaking during the breeding season (May for razorbill and July for guillemot). Other diving birds recorded in the Project area included eider, common scoter, goldeneye, red-throated diver, great northern diver, gannet, cormorant, shag, puffin and black guillemot. In addition to the species listed above, fulmar, manx shearwater, storm petrel, great skua, sandwich tern, arctic tern, kittiwake and black-headed, common, lesser black backed, herring and greater black backed gulls were observed during surveys.

There are several Special Protection Areas (SPAs) in the vicinity of the Project where seabirds are qualifying interests including Rathlin Island SPA and Sheep Island SPA. Other SPAs in the area include Antrim Hills SPA, Lough Foyle SPA, Larne Lough SPA, Belfast Lough SPA and Lough Neagh and Lough Beg SPA.

7.3.4 Fish and shellfish

A range of fish and shellfish species occur within the Project area and surrounding waters. These include a number of species that are protected by various conservation measures such as the common skate complex (OSPAR species and critically endangered on IUCN Red list), herring (Priority Marine Feature), cod and European eel (UKBAP species).

The Project area is a spawning ground for sprat and comprises nursery grounds for various species including herring, mackerel, cod, European hake, whiting, spurdog and common skate complex. The waters off Torr Head have also been identified as a main spawning area for spurdog. The specific location of nursery and spawning grounds may change from year to year depending on a number of environmental variables including seabed conditions within specific areas.

The closest salmon migration river is the Glendun River which is located to the south of the Project area. This river is used by Atlantic salmon and sea trout. The nearest European protected site for Atlantic salmon is the River Bladnoch SAC in south west Scotland.

7.4 Human environment

7.4.1 Seascape, landscape and visual

The Project is located off Torr Head on the North Antrim coast. The entire stretch of the North Antrim coast, and adjacent hinterlands, from Ballycastle in the west to Cushendun to the south is located within the Antrim Coast and Glens Area of Outstanding Natural Beauty (AONB). Several different Landscape Character Areas (LCAs) and Seascape Character Areas (SCAs) are located along the coast and adjacent offshore area. The Project area lies within the Torr Head Coast SCA. Key characteristics and features of the SCA include exposed headlands with crashing waves, sheltered bays, rocky outcrops and a strong sense of inaccessibility, remoteness and naturalness. Views from the coastal area immediately adjacent to the Project are dramatic with views of Scotland in the distance.

7.4.2 Socio-economics, recreation and tourism

The Project lies offshore of the Moyle Local Government District (LGD). With a population of approximately 17,050 people, the population of the Moyle LGD is smallest of any LGD in Northern Ireland. The main population centres are Ballycastle, Cushendun and Cushendall. Employment within the Moyle LDP is mainly within the human health and social work, construction and wholesale & retail trade sectors. The agriculture and accommodation and food services sectors also account for a large proportion of local jobs. A high proportion of the local population also commute long distances for employment.

Across Northern Ireland in terms of gross value added (GVA) public administration, education and health is of primary importance followed by distribution, transport, accommodation and food. There are also a number of prominent industries in the area which include marine engineering, construction and manufacturing. Tourism is also an important industry for the area with people visiting the Antrim Coast and Glens Area of Outstanding Natural Beauty (AONB) where key activities including cycling, hiking and walking. Sea angling is the key recreational activity offshore with tope, pollack, coalfish, ballan wrasse and mackerel being targeted in the Torr Head area. Other offshore activities include diving and wildlife tours.

7.4.3 Commercial fisheries

The most targeted commercial fisheries species in the vicinity of the Project area are shellfish, particularly through the use of creels / pots for crabs and lobsters along the coast. There is also a salmon fishery located at Portaleen Bay. While this has not been operational since 2012 there is potential that salmon fishing at Portaleen could resume in the future.

7.4.4 Marine archaeology and cultural heritage

The north coast of County Antrim has been identified as having high archaeological potential due to a number of shipwrecks that are known to have occurred within the area. Although there are records of a couple of known wreck sites in the AfL area and a number of recorded wrecking events within the Project area, no shipwrecks or related significant archaeological material has been detected during any of the geophysical surveys that have been carried out across the area. Due to the highly dynamic environment and hostile nature of the exposed bedrock located off Torr Head it is unlikely that any shipwreck in this location would remain intact for any length of time.

7.4.5 Shipping and navigation

Main ports in the vicinity of the Project area include Larne, Belfast and Coleraine. There are also a number of anchorage locations near to the Project area included Cushendun Bay, Red Bay, Carnlough Bay and Glenarm Bay to the south and Murlough Bay, Rathlin Island, Ballycastle, Ballintoy Harbour and White Park Bay to the west. Maritime vessel surveys were carried out over two 14 day periods in winter and summer 2014 to record vessel activity in an around the Project area. The majority of vessels observed in the AfL area were smaller vessels utilising the area for recreational or fishing reasons. There is a Traffic Separation Scheme (TSS) in place 1.5 nm to the north east of the AfL area. Tankers and other large vessels typically remain within this route.

7.4.6 Other sea users

There is no existing oil and gas infrastructure, offshore wind farms or aggregate dredging located in the vicinity of the Project area. However, the Project is located within the Offshore Frontier Licence Block P1885 awarded by to Providence Resources by DECC in 2012 as part of the UK's 26th Oil and Gas Licencing Round. A second licence application has been submitted to DECC under Petroleum Exploration Licences P2123. This licence application, which covers five blocks extending south from an area to the south of Torr Head is still under consideration.

The only other offshore renewable energy project in Northern Ireland waters is the Fair Head Tidal Energy Array, which is located approximately 4 km north west of the Torr Head AfL area. As part of the Northern Ireland offshore wind and tidal stream leasing round, an AfL area was also awarded to First Flight Wind for the development of an offshore wind farm off the coast of Kilkeel, approximately 112 km south of the Torr Head AfL area. However, this project is no longer being taken forward for development.

A number of subsea cables (electricity and telecommunications) pass north south through the North Channel and east west between Northern Ireland and Scotland. Closest to the Project area is the Rathlin Island Interconnector, which runs from Ballycastle to Rathlin Island, approximately 11 km from the AfL area. The Hibernia Atlantic telecommunications cable which is part of the Hibernia Atlantic telecommunications network passes within 13 km of the AfL. The AfL lies within military practice area X5528: Torr