Scottish Wildlife Trust

Policy

Decommissioning offshore infrastructure

November 2019

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Scope of Policy

1. This policy covers the Scottish Wildlife Trust's views on the decommissioning of offshore oil and gas infrastructure in the context of OSPAR Decision 98/3 on the Disposal of Disused Offshore Installations.[1] It supports the Trust's vision for 'a connected network of healthy, resilient ecosystems supporting Scotland's wildlife and people'.

Policy headlines

2. The Scottish Wildlife Trust believes that the current presumption of complete removal of offshore infrastructure should be reconsidered to allow for a rounded assessment of the options for each structure based on likely net positive or negative environmental impact, and whether removal is technically feasible.

3. The Trust considers that only inert material should be granted to be left in situ and that all polluting materials must be removed to land and disposed of appropriately.

4. The Trust believes that there are opportunities for potential triple-win scenarios from leaving oil and gas platforms in situ – environmental benefits and financial savings to the industry and the taxpayer.

5. The Trust believes that a natural capital approach to the decommissioning of offshore oil and gas infrastructure could inform a holistic environmental cost/benefit analysis of all options for decommissioning, including leaving the structure in situ.

6. The Trust considers that, where a decision to leave a structure in situ results in financial savings to the industry, a portion of those savings should be placed into a 'Marine Stewardship Fund'.

Introduction

7. Offshore oil and gas extraction has been a major industry in UK waters since the 1970s, reaching peak production around the year 2000.[2] Although oil and gas production has steadily decreased since, there remains extensive offshore infrastructure associated with the industry, which includes seabed and platform-mounted production facilities and networks of pipelines.[3] Many of these structures are now reaching the end of their productive life and are being considered for decommissioning.

8. Operators are under legal obligation to decommission infrastructure once production has ceased and eventually over 470 installations, 10,000km of pipeline and 5,000 wells will have to be decommissioned in UK waters. Additionally, drill cuttings will have to be managed and any accumulated debris cleared. This will be a significant activity in the UK over the next 30 to 40 years and estimated to cost between £45bn and £77bn.[4] Over the next decade, the UK is expected to spend £15.8bn on decommissioning.[5]

[1] OSPAR Decision 98/3 on the Disposal of Disused Offshore Infrastructure. Available at: http://www.ospar.org/
[2] BEIS – Crude oil and petroleum: production, imports and exports 1890 to 2018
[3] A detailed map and GIS shapefiles showing oil and gas infrastructure is available at https://www.gov.uk/oil-and-gas-offshore-maps-and-gis-shapefiles
[4] National Audit Office report: Oil and gas in the UK – offshore decommissioning 2019
[5] Decommissioning Insight 2018 – Oil and Gas UK

9. Regulation is in place to protect the UK taxpayer from future liability although it has been estimated that the total cost to the UK Government, through tax relief and reclaimed tax (decommissioning relief deeds[6]) is £24bn.[5]
10. Under current regulations, it is estimated that over 90% of offshore installations will be entirely removed for re-use, recycling or disposal on land. The remainder, comprising very large steel and concrete structures (39 structures), can be considered for partial removal.[7] To date, seven platforms have been decommissioned in-situ on the UK Continental Shelf (ranging from steel footings to entire concrete Gravity-Based Structures) and there are a further nine applications for partial removal pending.[8]

Regulatory Context

11. International obligations on the disposal of offshore installations are set out in OSPAR[9] Decision 98/3. The legally binding Decision affirms that the disposal of installations should be governed by the precautionary principle, which takes account of potential effects on the environment. However, the Decision also recognises that reuse, recycling or final disposal on land will generally be the preferred option.[10]

12. The Decision prohibits the dumping and leaving wholly or partly in place of disused offshore installations, but recognises the technical difficulty in removing the 'footings' of large steel jackets weighing more than 10,000 tonnes, concrete installations (including gravity-based structures and concrete anchors), and structures with significant damage or deterioration (otherwise preventing removal). Options for leaving these structures in place can be considered by way of applying for derogation from the general rule. The derogation does not apply to any steel installation placed after 9 February 1999, the date the Decision came into force. All 'topsides' (i.e. not part of the substructure) must be removed in any case.

13. The Decision allows for the categories for derogation to be reviewed and suggested amendments to be considered, taking into account the latest experience and research. Reviews to date, most recently in 2018, concluded that the operational experience to date was insufficient to justify any amendment to the derogation criteria. A further review will be undertaken in 2023.

14. The decommissioning of offshore oil and gas installations and pipelines in UK waters is governed by the Petroleum Act 1998, as amended by the Energy Act 2008. The responsibility for ensuring compliance with the Petroleum Act 1998 lies with the Offshore Petroleum Regular for Environment and Decommissioning (OPRED), which sits within the Department for Business, Energy and Industrial Strategy (BEIS).

15. Under the Petroleum Act 1998, owners of oil and gas installations are required to set out the measures to decommission disused installations and/or pipelines in a Decommissioning Programme. The Decommissioning Programme must identify all equipment, infrastructure and materials that have been installed or drilled and describe the decommissioning solution for each.[9]

16. Under BEIS guidance the assessment of disposal options should include consideration of effects on the marine environment, including the impact on biota from exposure to contaminants and physical effects and any conflict with the conservation of species and habitats. An Environmental Impact Assessment (EIA) must support the decommissioning programme.

[6] Decommissioning Relief Deeds - www.gov.uk/government/publications/decommissioning-relief-deeds-claim-statement
[7] Oil and Gas UK database
[8] BEIS - Oil and gas: decommissioning of offshore installations and pipelines - https://www.gov.uk/oil-and-gas-decommissioning-of-offshore-installations-and-pipelines
[9] OSPAR is the mechanism by which fifteen Governments of the western coasts and catchments of Europe, together with the European Community, cooperate to protect the marine environment of the North-East Atlantic. See: http://www.ospar.org/
[10] The decision does not apply to pipelines. These are covered by the UK Petroleum Act 1998.

17. The Marine Strategy Framework Directive[11] is the first all-encompassing piece of EU legislation specifically aimed at the protection of the marine environment, with its primary objective to achieve Good Environmental Status (GES) of all EU waters by 2020 at the latest. The Directive sets out 11 high- level Descriptors of GES, which cover the key aspects of the marine ecosystem and the main human pressures on them (see appendix 1).

North Sea Ecosystem

18. Human activities on land and sea place significant pressure on the health of marine ecosystems globally. Overfishing and destructive fishing, eutrophication, pollution, litter, energy production, fossil fuel and aggregate extraction, and the impacts of climate change are all on-going concerns in the North Sea.[12]

19. The expanding offshore wind industry throughout the North Sea will see a significant increase in the number of wind turbines and associated infrastructure (e.g. cables and landing substations) placed on the seafloor. The increased and widespread presence of hard, man-made surfaces in a predominantly soft sand habitat can influence species composition, abundance and distribution, as well as connectivity between distinct marine communities.
20. Centuries of fishing activity has had a significant impact on the seafloor, and it is highly likely that there are no pristine habitats remaining in the North Sea. Examples of seafloor habitat that have been unaffected by fishing activity are considered rare.[13]

21. There is however a growing body of research that suggests the presence of oil and gas infrastructure, along with other man-made structures, may have contributed to the North Sea ecosystem.[14] The presence of offshore platforms can contribute to marine ecosystems through the creation of:

    1) spatial protection in the form of vessel exclusion zones (500m radius from the platform), and

    2) habitat in the form of *de facto* artificial reefs.

22. The presence of oil and gas platforms has potentially influenced the distribution and abundance of species throughout the North Sea, as many species either colonise the structure itself or utilise the structure for food and/or protection. For example, the distribution of mobile species, such as cod, plaice and thornback rays, has been found to be strongly associated with the presence of man-made structures, including oil and gas platforms.[15]

Spatial Protection

23. There are several areas around our coastline where access and/or use are restricted for reasons other than conservation (e.g. safety, archaeological interest, military use). Where these restrictions prevent access for potentially damaging activities, such as bottom trawl fishing, they can act as conservation-based Marine Protected Areas.

24. For health and safety reasons, vessel exclusion zones are set at a 500m radius around all offshore oil and gas structures on the UK Continental Shelf that project above the sea. Subsea structures such as wellheads may

[11] Directive 2008/56/EC
[12] OSPAR Intermediate Assessment 2017 - https://oap.ospar.org/en/ospar-assessments/intermediate-assessment-2017/
[13] Roberts, C. & Mason (2008) Return to Abundance: A Case for Marine Reserves in the North Sea. Report for WWF UK - http://www.wwf.org.uk/filelibrary/pdf/marine_reserves_north_sea.pdf
[14] Influence of Man-made Structures in the Ecosystem (INSITE) programme - https://www.insitenorthsea.org/publications/
[15] Wright, S R, et al. 2018. Structure in a sea of sand: fish abundance in relation to man-made structures in the North Sea. ICES Journal of Science, fsy142

also have exclusion zones set by legal instrument.[16] The implementation of vessel exclusion zones around each oil and gas platform (and other subsea structures) has, by default, created a network of small, but numerous, no-take zones throughout the North Sea.

25. While the overall area excluded from fishing is likely to be small (estimated at c.1% of the North Sea[17]), it should be looked at in the context of the UK North Sea's only designated No Take Zone at Flamborough Head, Yorkshire (c. 1 sq.km or 0.0001% of the North Sea area). [18] MPA coverage in the North Sea is currently 18.6% and includes sites designated under the Birds and Habitats Directives as well as national legislation.[19] However, such designations do not necessarily result in the exclusion of human activity.

26. In Scotland, area-based measures such as vessel exclusion zones can potentially be recognised as contributing to an overall network of MPAs but are unlikely to be designated as such.[20] According to IUCN (International Union for the Conservation of Nature) guidelines, offshore installations that may have an indirect benefit to nature conservation by increasing biodiversity around underwater structures and by excluding fishing and other vessels should not automatically be classified as MPAs as they have no stated aim for nature conservation.[21]

27. Once a platform has stopped producing oil or gas, the vessel exclusion zone around the platform is no longer enforced and the surrounding waters are opened up to fishing activity again.

Habitat Creation

28. An artificial reef is a submerged structure placed on the seabed deliberately, to mimic some characteristics of a natural reef.[22] Under this definition, offshore infrastructure cannot be considered as an artificial reef as this is not the primary objective of is placement, nor is this function built into its design.

29. Nevertheless, offshore structures can in some cases support species associated with natural reefs.[23] For example, the cold water, reef-forming coral *Lophelia pertusa*, a species undergoing overall decline in the NE Atlantic due to mechanical damage by fishing gear, has been recorded on North Sea oil rigs.[24] Furthermore, it has been suggested that oil platforms have the potential to act as a conservation tool for some protected and rare species by increasing connectivity between distinct populations.[25]

30. In the US, the states of Louisiana, Texas, Mississippi, and California have all passed specific legislation to establish programmes for building artificial reefs from oil and gas platforms. Termed *Rigs to Reef* programmes, 431 platforms in the Gulf of Mexico have been converted into artificial reefs (13% of all platforms removed).[26] However, it is notable that the principal driver for these rigs-to-reef programmes has been the creation of recreational angling and diving opportunities that are not transferrable to the North Sea setting.

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[16] HSE (2011) Safety zones around oil and gas installations in waters around the UK. Available at: http://www.hse.gov.uk/pubns/indg189.pdf
[17] DTI (2002) Strategic Environmental Assessment - SEA2 Technical Report TR_003. Available at: http://www.cefas.defra.gov.uk/media/20461/tr_003.pdf
[18] NE IFCA Flamborough Head No Take Zone - http://www.ne-ifca.gov.uk/EasySiteWeb/GatewayLink.aspx?alId=114515
[19] OSPAR Commission (2018) Status of the OSPAR Network of Marine Protected Areas in 2018, OSPAR Commission.
[20] Marine Protected Areas in Scotland's Seas: Guidelines on the selection of MPAs and development of the MPA network. http://www.scotland.gov.uk/Resource/Doc/295194/0114024.pdf
[21] Day, J. et al. (2012) Guidelines for applying the IUCN Protected Area Management Categories to Marine Protected Areas. Gland, Switzerland: IUCN. 36pp. - https://cmsdata.iucn.org/downloads/uicn_categoriesamp_eng.pdf
[22] OSPAR Guidelines on Artificial Reefs in relation to Living Marine Resources
[23] Coolen, JWP, et al. (2018) Benthic biodiversity on old platforms, young wind farms, and rocky reefs. ICES Journal of Marine Science, fsy092
[24] Hall-Spencer, J. & Stehfest, K. (2008) OSPAR Commission: Background Document for *Lophelia pertusa* reefs
[25] Henry, L-A et al. (2018) Ocean sprawl facilitates dispersal and connectivity of protected species. *Scientific Reports* volume 8, Article number: 11346
[26] US Department of the Interior Bureau of Safety and Environmental Enforcement, Decommissioning statistics - www.bsee.gov/what-we-do/environmental-focuses/decommissioning/decommissioning-statistics

31. OSPAR Decision 98/3 in combination with the OSPAR guidelines on artificial reefs[27] currently rules out any potential for rigs-to-reef type approaches in the North Sea.

Research and Initiatives

32. There are currently joint industry and multi-stakeholder research programmes in development to explore the potential ecological role of offshore infrastructure in the North Sea.

33. INSITE[28] is a joint industry and science-based project that began in 2012 with the objective of providing stakeholders with the independent scientific evidence-base needed to better understand the influence of man-made structures in the North Sea. Now in its second phase, the INSITE programme aims to increase collaboration and data sharing between industry and researchers and continue to test the following four hypotheses:

    I. Each structure is a different habitat type depending upon its engineering design, absolute and relative location and the local environment, but structures can be classified into different functional groupings.

    II. Marine communities vary systematically across structures depending on their characteristics as defined by hypothesis 1.

    III. The spatial and temporal variability in the North Sea ecosystem is large compared to the potential effects of offshore structures.

    IV. North Sea structures represent an ecologically important component of the North Sea ecology because they operate as a large interconnected reef system.

34. The Living North Seas Initiative (LiNSI), which ran from 2011 to 2015, was a North Sea wide, science-based multi-stakeholder programme, supported by the oil and gas sector, to explore new opportunities for restoring a healthy and rich North Sea ecosystem through alternative approaches to decommissioning. [29] The LiNSI programme produced several reports that explored the various options for decommissioning oil and gas platforms and stimulated international discussion on the potential application of a rigs-to-reefs style programme in the North Sea.

Policy Statements

35. The Trust believes that until the scientific evidence-base is sufficiently developed to provide a full understanding of the role of offshore infrastructure in the marine ecosystem (positive and negative), the starting position should be the existing presumption for complete removal for re-use, recycling or disposal to land.

36. The Trust is however prepared to support pragmatic solutions to decommissioning, based on likely net positive or negative environmental impact as determined through formal environmental assessment, and whether removal is technically feasible. The Trust accepts that in the future this could involve consideration of removal options for all structures on a case-by-case and/or a structure type basis rather than the current regulatory regime that defaults to full removal unless there are grounds for derogation.

[27] OSPAR Guidelines on Artificial Reefs in relation to Living Marine Resources (Reference number: 2012-3). Available at: http://www.ospar.org
[28] Influence of man-made Structures in The Ecosystem http://www.INSITEnorthsea.org
[29] Living North Sea Initiative - http://ecoeffective.biz/?page_id=81

37. The Trust believes that a natural capital approach to assessing the environmental costs and benefits for different options for decommissioning, including leaving in situ, could provide a valuable and informative insight into the wider environmental impact of decommissioning activity, including carbon footprint and waste management as well as direct environmental and ecological impacts. Such an approach could assess activities throughout the decommissioning process, from the initial removal of the structure through to the recycling, reusing and disposing of the material brought to land.

38. The Trust believes that while the habitat creation effect of offshore infrastructure may appear to benefit certain species there is as yet little evidence that platforms provide net ecological benefits to the marine ecosystem as a whole relative to areas left in or allowed to return to a natural state. In particular, the Trust would urge caution on judging the value of a habitat (whether artificially created or not) on the basis of species richness alone, but also consider the value of naturally species poor habitats, particularly where these have a high degree of habitat integrity and functionality.

39. The Trust believes that in the short to medium term operators, government and research institutions should take the opportunity to conduct pre-decommissioning monitoring of the exclusion zones around offshore infrastructure to establish baseline information on seabed habitats protected from physical disturbance by bottom trawl fishing.

40. The Trust considers that additional data collection and monitoring of oil and gas platforms that have been awarded derogation, and continue acting as artificial reefs, should be made a requirement to improve our understanding of the ecological value of offshore platforms, both individually and collectively.

41. The Trust considers that any infrastructure left in situ should be inert and cleaned of all pollutants. This is particularly relevant to the contents of storage cells in the larger concrete, gravity-based structures, which can contain a range of pollutants, such as hydrocarbons and heavy metals. The Trust considers that any proposal to leave cell contents in situ, with the knowledge that these polluting materials will eventually disperse into the surrounding marine environment when the structure breaks down, is unacceptable.

42. The Trust believes that there are potential triple-win scenarios from leaving oil and gas platforms in situ – environmental benefits, and financial savings to the industry and to the taxpayer – and that these opportunities should be identified and explored.

43. The Trust understands that options other than full removal represent potentially significant financial savings to operators. We, therefore, believe that there is an opportunity to create a novel funding mechanism by placing a portion of these savings into a Marine Stewardship Fund. Such a fund could help in delivering improvements in the sustainable management of the North Sea area, in turn aiding the protection and enhancement of biodiversity and the provision of ecosystem goods and services.

44. The Trust will engage with and contribute as appropriate to research programmes and initiatives investigating the role of offshore infrastructure in the ecological health of the North Sea and exploring novel funding mechanisms for environmental outcomes. Future decommissioning strategies and international and national legislation should consider the recommendations from such initiatives.

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Appendix 1

1. The Marine Strategy Framework Directive (MSFD) aims to achieve Good Environmental Status in Europe's seas by 2020. Good Environmental Status (GES) involves protecting the marine environment, preventing its deterioration and restoring it where practical, while using marine resources sustainably. It is transposed into UK law by the Marine Strategy Regulations 2010.

2. The Directive sets out 11 high-level Descriptors of Good Environmental Status (see below), which cover the key aspects of the marine ecosystem and the main human pressures on them.

3. Qualitative descriptors for determining good environmental status:

    a. 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.
    b. Non-indigenous species introduced by human activities are at levels that do not adversely alter the ecosystems.
    c. 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.
    d. 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.
    e. 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.
    f. 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.
    g. Permanent alteration of hydrographical conditions does not adversely affect marine ecosystems.
    h. Concentrations of contaminants are at levels not giving rise to pollution effects.
    i. Contaminants in fish and other seafood for human consumption do not exceed levels established by Community legislation or other relevant standards.
    j. Properties and quantities of marine litter do not cause harm to the coastal and marine environment.
    k. Introduction of energy, including underwater noise, is at levels that do not adversely affect the marine environment.