



dti

**DECOMMISSIONING OF
OFFSHORE RENEWABLE ENERGY
INSTALLATIONS UNDER THE
ENERGY ACT 2004**

GUIDANCE NOTES FOR INDUSTRY

DECEMBER 2006

DECOMMISSIONING OFFSHORE RENEWABLE ENERGY INSTALLATIONS UNDER THE ENERGY ACT 2004

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1. Introduction

1.1 Sections 105 to 114 of the Energy Act 2004 introduce a decommissioning scheme for offshore wind and marine energy installations. Under the terms of the Act, the Secretary of State may require a person who is responsible for one of these installations to submit (and eventually carry out) a decommissioning programme for the installation.

1.2 The Government has developed this guidance on the operation of the scheme to assist businesses in understanding their obligations under the scheme. The guidance covers a number of matters, including:

Scope of the decommissioning scheme – the geographical scope of the scheme and the categories of installation included within the scheme

Process – the processes for submitting, getting approval for, reviewing and modifying a decommissioning programme submitted under the scheme

Content of decommissioning programmes – what matters are to be covered in a decommissioning programme submitted under the scheme

Decommissioning standards – the general requirement to remove installations and any exceptions from this general requirement; how they are to be removed; how waste is to be dealt with; notification and marking of any remains; and monitoring, maintenance and management of the site after decommissioning

Financial security – the need for financial security and the forms of financial security which are acceptable

Residual liability – the residual liability which remains with the owners following decommissioning

Industry cooperation and collaboration – the value of industry cooperation and collaboration at the decommissioning stage

1.3 The guidance is expected to be of interest to businesses who are developing and taking ownership of offshore generating stations, as they are responsible for submitting decommissioning programmes, providing financial security when required, and, eventually, implementing decommissioning programmes. The guidance may also be of interest to other stakeholders, including

environmental organisations, navigational interests, the fishing industry and other users of the marine environment.

1.4 Copies of this guidance may be made without seeking permission. Further printed copies of the guidance can be obtained (quoting reference URN 06/2086) from:

DTI Publications Orderline
ADMAIL 528
London SW1W 8YT

Tel: 0845 015 0010
Fax: 0845 015 0020
Minicom: 0845 015 0030
Web: www.dti.gov.uk/publications

1.5 An electronic version can be found at:

<http://www.dti.gov.uk/energy/sources/renewables/policy/offshore/page22500.html>

1.6 The guidance will be updated as necessary. Any comments on the content of the guidance, including suggestions for improving it, should be sent to:

Sue Batten
DTI
Bay 2115
1 Victoria Street
London
SW1H 0ET

Tel: 020 7215 2239
Fax: 020 7215 2601
Email: sue.batten@dti.gsi.gov.uk

2. How to use this guidance

2.1 This guidance has been prepared for developers and owners of offshore renewable energy installations, to explain to them their decommissioning obligations under the statutory decommissioning scheme in the Energy Act 2004.

2.2 The guidance can be used to:

- i) decide whether or not a particular installation is included within the scope of the scheme. **Chapter 4** (Scope of the decommissioning scheme) sets out which installations are included. For those installations which are not included in the scheme, this guidance is not directly relevant. However, developers and owners of these installations can still expect to have decommissioning obligations, for example in the terms of any lease with The Crown Estate;
- ii) understand the processes which must be followed for submission, approval and review of decommissioning programmes (as set out in **Chapter 5**);
- iii) understand what must be included in a decommissioning programme submitted under the scheme. **Chapter 6** sets out a model framework for decommissioning programmes. The measures proposed in the decommissioning programme should be in line with the standards set out in **Chapter 7**, and the financial security proposed in the programme should be in line with the principles set out in **Chapter 8**.

3. Policy and legislative framework

Rationale for decommissioning scheme

3.1 The decommissioning provisions in the Energy Act 2004 reflect the Government's view – taking into account our international obligations – that a person who constructs, extends, operates or uses an installation should be responsible for ensuring that the installation is decommissioned at the end of its useful life, and should be responsible for meeting the costs of decommissioning (the “polluter pays” principle).

3.2 By imposing a legal obligation on businesses to prepare and carry out a decommissioning programme, and potentially requiring them to provide financial security, the Government's view is that the decommissioning scheme in the Energy Act reduces the risk of companies defaulting on their decommissioning liabilities. At the same time, the Government wishes to implement the scheme in such a way that it does not hinder the development of offshore renewable energy installations.

Policy approach

3.3 Our approach is to seek decommissioning solutions which are consistent with our international obligations, as well as UK legislation, and which have a proper regard for safety, the environment, other legitimate uses of the sea and economic considerations. We will act in line with the principles of sustainable development.

3.4 We aim to ensure that interested parties are given clear information on the operation of the decommissioning scheme. We intend that processes for approving decommissioning programmes should be open and transparent, and that decisions should be taken in an efficient manner, placing as little administrative burden as possible on the parties involved.

International obligations

3.5 Our international obligations to decommission disused installations are set out in Annex A. They have their origins in the United Nations Convention on the Law of the Sea (UNCLOS), 1982.

This requires abandoned or disused installations or structures to be removed, to ensure safety of navigation, taking into account generally accepted international standards.¹ International Maritime Organization (IMO) standards were adopted in 1989.

3.6 Relevant work has also been undertaken under the OSPAR Convention, which guides international cooperation on the protection of the marine environment of the North-East Atlantic. OSPAR Decision 98/3² sets out binding requirements for the disposal of disused offshore oil and gas installations. Whilst there is no equivalent Decision for offshore renewable energy installations, OSPAR has produced guidance documents on offshore wind farms, incorporating ideas on their decommissioning.

Decommissioning provisions in the Energy Act 2004

3.7 The key decommissioning provisions in the Energy Act 2004 (Sections 105 to 114) are explained in Annex B. Broadly speaking, the Secretary of State may require a person who is responsible for an offshore renewable energy installation to prepare a costed decommissioning programme and ensure that it is (eventually) carried out. The Secretary of State can approve, modify or reject a programme, including any financial security provisions which the responsible person proposes to provide. The Secretary of State is required to review the programme from time to time.

Role of The Crown Estate

3.8 The Government and The Crown Estate will work together to avoid duplicating decommissioning requirements imposed on developers. The Government has agreed with The Crown Estate that developers covered by this statutory decommissioning scheme will only need to prepare one decommissioning programme, which will be submitted to DTI. (An additional programme will not be required by The Crown Estate, and The Crown Estate will not impose additional provisions relating to the actual decommissioning in its leases with developers.) Developers covered by this scheme will only need to provide any financial security required by Government, and will not need to provide financial security for decommissioning itself to The Crown Estate. The Crown Estate may have small

1 Guidelines and Standards for the Removal of Offshore Installations and Structures on the Continental Shelf and in the Exclusive Economic Zone, IMO, 19 October 1989, http://www.imo.org/Newsroom/contents.asp?doc_id=628&topic_id=227

2 OSPAR Decision 98/3 on the Disposal of Disused Offshore Installations, <http://www.ospar.org/eng/html/welcome.html>

additional financial requirements to cover residual liability issues, such as third party claims and consequential loss (see Chapter 9). The Government will consult with The Crown Estate on decommissioning programmes submitted by developers, and on any proposed modifications to approved plans, and take due account of the advice of The Crown Estate.

Compliance with other relevant legislation

3.9 Decommissioning activities will need to comply with all relevant UK legislation at the time. Annex C gives a summary of the main items of current legislation which are relevant to decommissioning activities.

3.10 Such legislation currently includes: the Coast Protection Act (CPA) 1949; the Food and Environment Protection Act (FEPA) 1985; the Water Resources Act 1991; the Conservation (Natural Habitats etc.) Regulations 1994; the disposal or recovery of waste on land, principally under Part II of the Environmental Protection Act 1990, other legislation relating to the carriage and transfer of waste and, where appropriate, the Hazardous Waste Regulations 2005; and relevant health and safety legislation. Decommissioning activities will also need to comply with any relevant international legislation, which might include, for example, the London Convention 1972 and the 1996 Protocol, relating to the prevention of marine pollution by dumping of wastes.

Future development of the decommissioning scheme and guidance

3.11 This guidance on the operation of the decommissioning scheme is intended to be flexible, and will be reviewed over time. This will allow it to be adapted in line with any future changes in legislation or policy, for example implementation of the proposed Marine Bill and operation of the Environmental Impact Assessment Directive.

4. Scope of the decommissioning scheme

Geographical scope

4.1 The scheme, as set out in the Energy Act 2004, applies to territorial waters in or adjacent to England, Scotland and Wales (between the mean low water mark and the seaward limits of the territorial sea, thereby including internal coastal waters and territorial waters) and to waters in the UK Renewable Energy Zone (including that part adjacent to Northern Ireland territorial waters). The scheme does not apply to the territorial or internal coastal waters of Northern Ireland.

Categories of installation included in the scope

4.2 The scheme, as set out in the Energy Act 2004, applies to offshore renewable energy installations and their related electric lines. The precise definition is set out in Section 104 of the Act. In essence, installations which are included within the definition (and hence within the scope of this scheme) are those which are:

- used (or will be used or have been used) for purposes connected with the production of energy from water or winds; and
- permanently rest on, or are permanently attached to, the bed of the waters; and
- are not connected with dry land by a permanent structure providing access at all times for all purposes.

4.3 The Government intends to apply the scheme widely, to all new offshore wind, wave and tidal energy installations which fall within the definition above (whatever their generating capacity and whether they are commercial or demonstration devices). This includes:

- any Round One wind farms which are consented, under Section 36 of the Electricity Act 1989 or the Transport and Works Act 1992, *after June 2006*;
- all Round Two and subsequent wind farms;
- all wave and tidal energy installations which fall within the definition above and which are consented or become operational *after June 2006*.

4.4 We do not intend to apply the scheme to installations which were consented, under Section 36 of the Electricity Act 1989 or the Transport and Works Act 1992, prior to June 2006 (the point at which we launched a public consultation on the operation of the scheme). This is in the light of commitments made by the Government during the passage of the Energy Bill through Parliament. In addition, we do not intend to apply the scheme to installations which were put into operation prior to June 2006 but which did not require an Electricity Act or Transport and Works Act consent.

Inter-tidal zone

4.5 The scheme, as set out in the Energy Act 2004, does not cover the inter-tidal zone (the area of the shore between the high and low tide waterlines). However, decommissioning of any infrastructure in this zone should be carried out in accordance with any removal conditions attached to the Coast Protection Act 1949 (CPA) consent and/or the Food and Environment Protection Act 1985 (FEPA) consent for the infrastructure. (Further information on the CPA and FEPA is provided in Annex C.)

5. Process for submission, approval and review of decommissioning programmes

Overall approach

5.1 Our intention is that the process leading to the approval of a decommissioning programme should be flexible, transparent and subject to consultation. It should also take account of the need for modification and review, given the considerable time lag expected between approval of a decommissioning programme and it ultimately being carried out.

5.2 The intention is, as far as possible, for DTI to provide a “one stop shop” in relation to decommissioning. However, there may be occasions when developers will need to enter into a separate dialogue with individual Government Departments or their Agencies or with other bodies (for example, The Crown Estate and appropriate conservation agencies) if specific matters relating to their areas of responsibility arise.

5.3 The process in a typical case is illustrated below.

Decommissioning Programme Process

| Stage 1 | Stage 2 | Stage 3 | Stage 4 | Stage 5 | Stage 6 | Stage 7 | Stage 8 |
|---|--|--|---|---|--|--|--------------------|
| Preliminary discussions with DTI initiated by developer | Issue of a notice by the Secretary of State requiring a decommissioning programme* | Detailed discussions; submission and consideration of a draft programme (including proposed financial security measures) | Consultation with interested parties; DTI conducts decommissioning Appropriate Assessment (where necessary) | Formal submission of a programme and approval under the Energy Act* | Reviews and modifications of decommissioning programme (and any financial security); review or conduct of decommissioning Appropriate Assessment (where necessary) | Undertake approved decommissioning programme | Monitoring of site |

* following consultations with the Scottish Ministers where appropriate

5.4 A flowchart is included at Annex D, setting out how the consideration of decommissioning proposals operates in practice.

Stage 1: preliminary discussions

5.5 We recommend that developers enter into early discussions with DTI, to ensure that they understand their decommissioning obligations and can take account of them from an early stage. Developers will wish to be clear about their decommissioning liabilities, and any financial security requirements, in putting together project finance.

5.6 Early discussions are also important because the Secretary of State is obliged to consider how he will exercise his decommissioning powers in determining whether to give a consent to generate electricity under Section 36 of the Electricity Act 1989. Such consents are likely to include a condition that construction cannot begin until a decommissioning programme has been submitted in accordance with a notice served under Section 105(2) of the Energy Act.

5.7 We encourage developers to begin considering decommissioning programmes as soon as practicably possible. Discussions should commence well ahead of the proposed construction of the installation and, where possible and appropriate, might usefully take place in parallel with discussions about Section 36 and other statutory consent applications.

5.8 The contact in DTI is:

Sue Batten
DTI
Bay 2115
1 Victoria Street
London
SW1H 0ET

Tel: 020 7215 2239
Fax: 020 7215 2601
Email: sue.batten@dti.gsi.gov.uk

Stage 2: issue of a decommissioning notice by the Secretary of State

5.9 Once at least one of the statutory consents required for an installation has been given, or has been applied for and is likely

to be given, the Secretary of State will issue a notice requiring the developer to submit a decommissioning programme. The requirement to submit a decommissioning programme may be imposed on more than one person, in which case a joint programme must be submitted.

Stage 3: detailed discussions leading to submission of draft decommissioning programme

5.10 The developer should prepare a draft decommissioning programme, including proposed financial security provisions, using the model framework in Chapter 6 and Annex E as a guide. The measures proposed in the decommissioning programme should be in line with the standards set out in Chapter 7, and the financial security proposed in the programme should be in line with the principles set out in Chapter 8. The programme should be informed by an Environmental Impact Assessment (using the analysis already undertaken for the wider EIA done prior to consent of the installation) as set out in Chapter 6 and Annex E. We would encourage the developer to discuss requirements with DTI before submitting the draft programme to:

Offshore Renewable Energy Decommissioning Manager
DTI
Bay 2115
1 Victoria Street
London
SW1H 0ET

Stage 4: consultation with interested parties; conduct of Appropriate Assessment

5.11 As a general principle, the decommissioning programme should be open and transparent. The developer is expected to ensure that the public are able to participate in the process by, for example, announcing its proposals, making them publicly available and undertaking consultations with statutory consultees and interested parties (or demonstrating that appropriate consultations have already been carried out). Details of the statutory consultees will be specified to companies in receipt of a decommissioning notice. The extent of these consultations will be determined by the particular circumstances.

5.12 In all cases, the developer should consult with key representatives of parties who may be affected by the decommissioning proposals, such as the fishing industry and other users of the sea. We would expect other consultees to include: the Joint Nature Conservation Committee (where appropriate); Natural England, the Countryside Council for Wales or Scottish Natural Heritage (as the case may be); the Environment Agency or the Scottish Environment Protection Agency (as the case may be); English Heritage, Cadw, Historic Scotland or the Built Heritage Directorate: Environment & Heritage Service, Northern Ireland (as the case may be); the Maritime and Coastguard Agency; the appropriate General Lighthouse Authority; and the relevant harbour authority (if any). Consultees should normally be given 30 days in which to comment.

5.13 In parallel with the developer's consultations, the DTI will consult with relevant Government Departments, the Devolved Administrations (where appropriate) and The Crown Estate. DTI will then send the developer written comments on the draft decommissioning programme.

5.14 The developer should take account of the comments received from DTI, as well as comments received during the developer's own consultations, in updating the draft decommissioning programme. The developer should send a final draft of the programme to DTI who will then decide, on a case-by-case basis, whether it is necessary and helpful to (re)consult statutory consultees or other interested parties on the final draft of the decommissioning programme.

5.15 Where developers wish, they may decide to include their decommissioning proposals within the consultations they conduct in the process of securing statutory consents (thus avoiding the need for a separate consultation process on the decommissioning programme). It is recognised that Round 2 wind farm developers who have already undertaken consultations (for the purposes of applying for consent) are unlikely to have consulted on decommissioning proposals and will therefore need to consult further.

5.16 It may be necessary for DTI to conduct an Appropriate Assessment, in consultation with Natural England (or relevant statutory conservation agency in the Devolved Administrations), under the EU Habitats and Birds Directives (Directives 92/43/EEC on the conservation of natural habitats and 79/409/EEC on the conservation of wild birds). These Directives establish a European-wide network of sites – Special Areas of Conservation under the Habitats Directive and Special Protection Areas under the Birds

Directive – to promote the conservation of habitats, wild animals and plants, both on land and at sea. These sites are subject to statutory protection measures contained in the Conservation (Natural Habitats etc.) Regulations 1994, the Conservation (Natural Habitats etc.) Regulations (Northern Ireland) 1995 and the forthcoming Offshore Marine Conservation (Natural Habitats etc.) Regulations. (Annex C provides more information about this legislation.)

5.17 A decommissioning programme will be subject to an Appropriate Assessment of its implications for the site, in view of the site's conservation objectives, unless it can be concluded, on the basis of objective information, that the programme will not have a significant effect, either individually or in combination with other plans or projects. Where this cannot be concluded, the impacts that may be caused by decommissioning will need to be addressed in an Appropriate Assessment done before the decommissioning programme is approved. DTI will prepare this Appropriate Assessment, in consultation with Natural England (or relevant statutory conservation agency advising the Devolved Administrations), drawing on information in the developer's draft decommissioning programme, amongst other things.

5.18 Whilst the developer need not wait for completion of the Appropriate Assessment before formally submitting the decommissioning programme to Government (and commencing construction), the decommissioning programme will not be approved until after completion of the Appropriate Assessment.

5.19 In order to approve a decommissioning programme, the DTI will need to establish that it will not adversely affect the integrity of the site, and, where appropriate, it will need to obtain the opinion of the general public before giving its approval. In this regard, the DTI will be able to conclude that a programme will not adversely affect the site concerned where "they have made certain that it will not adversely affect the integrity of the site. That is the case where no reasonable scientific doubt remains as to the absence of such effects" (see the European Court of Justice's ruling in Case C-127/02). In very limited circumstances, and subject to compensatory measures being taken, a programme may be consented to under the terms of the Habitats Directive despite a negative assessment of the implications for the site (see Article 6(4) of the Directive).

Stage 5: formal submission and approval of decommissioning programme

5.20 Once the final draft of the decommissioning programme has been agreed with DTI, the developer should formally submit it to:

Offshore Renewable Energy Decommissioning Manager
DTI
Bay 2115
1 Victoria Street
London
SW1H 0ET

5.21 The Secretary of State may: approve the submitted programme as it stands; approve the programme with modifications and/or subject to conditions (after giving the developer an opportunity to make representations); reject the programme and require a new one; or prepare a decommissioning programme himself and recover the expenditure incurred from the developer.

5.22 Where more than one person has submitted a programme, different conditions (for example, in relation to financial security) may be imposed upon different persons.

5.23 Once the programme has been approved, the developer should make it publicly available (for example, on the Internet), so that all interested parties may see it and, if they wish, offer further comments on it. Any comments that are submitted by interested parties should be considered when the programme is reviewed.

Stage 6: reviews and modifications

5.24 Our intention is to provide developers with as clear and stable a regulatory environment as possible to minimise uncertainty. At the same time, the process needs to provide for appropriate reviews and modifications, given the expected length of time between approval of programmes and the actual decommissioning itself. The Energy Act provisions (discussed in more detail in Annex B) require the Secretary of State to review approved decommissioning programmes. Such reviews will consider the decommissioning proposals themselves and, in particular, the financial provision for them.

5.25 It is likely to be in developers' interests to review their decommissioning programmes at regular intervals. Developers may wish to make proposals to modify their programmes, to take into account information gathered during the course of construction and

operation, as well as changes in market conditions, international standards, the regulatory regime, knowledge of environmental impacts, technology or costs.

5.26 Developers may also decide to sell their asset and seek a transfer of decommissioning liabilities to the new owner. Under the Energy Act, there is no automatic change in liability on transfer of ownership. The Secretary of State would need to approve any change and would, for example, take account of any potential increase in the risk of default on decommissioning liabilities that might arise from such a change.

5.27 We will endeavour to agree with developers on the appropriate time to undertake each review that may be needed. We do not intend to impose a set timetable for review, but to take account of the particular circumstances of the time and each case. In all cases, we would envisage a review prior to the actual decommissioning of the installation, to finalise the decommissioning measures envisaged. The timing of this final review should be discussed with DTI. It needs to be commenced early enough to allow the Environmental Impact Assessment (EIA) to be reviewed and, if necessary, a more detailed assessment undertaken, before the decommissioning measures are finalised. As a general guide, for a commercial scale wind farm, we suggest that the final review might start approximately 2 years before it is planned to start the actual decommissioning operation. That would allow time for any surveys to be undertaken that might be agreed to be necessary for the final EIA.

5.28 Other reviews are likely to be required depending, for example, on project life, financial security provisions, market conditions and technical performance. The objective of these other reviews will be to ensure that financial security provisions are sufficient, and the frequency of reviews will be determined in the light of this objective.

5.29 As a general guide, without prejudice to the exercise of this function in any particular case, we might expect reviews to be undertaken at the following points for a commercial scale wind farm: once the installation has been in operation for 2 years; 2 years prior to provision of financial security (for example, 2 years prior to the mid life of the installation if a mid life accrual fund is the chosen financial security option); and half way through the period during which financial security is provided. The intention is to minimise the regulatory burden whilst taking account of our international obligations and the need to protect the Government (and hence the taxpayer) against the risk of default on decommissioning liabilities.

Reviews may be more or less frequent in particular cases as circumstances dictate.

5.30 We would expect most reviews and modifications to be agreed between the Government and the developer (without the need to consult other interested parties). The exception would be the final review undertaken prior to decommissioning, where changes may be proposed to the decommissioning programme (or to the Environmental Impact Assessment informing the programme) which might warrant further consultation with external stakeholders.

5.31 If a decommissioning Appropriate Assessment has been carried out at the start of an installation's life, we would also expect this Appropriate Assessment to be reviewed towards the end of the installation's life, in the light of any changes to (or more detailed information on) the decommissioning measures proposed and/or changes to the site likely to be affected. The review will draw on as much information as possible from the first Appropriate Assessment.

5.32 Even if a decommissioning Appropriate Assessment was not carried out at the start of an installation's life (for example, because it was possible for significant effects to be excluded, on the basis of objective information, at that stage), an Appropriate Assessment might nevertheless be needed before the decommissioning programme is put into action, if it is not possible at that stage to rule out significant effects on a protected site. This might be due to changes in the programme and/or changes to the site likely to be affected.

Stage 7: undertake approved decommissioning programme

5.33 At the end of the installation's life, the developer is expected to undertake the approved decommissioning programme. Once decommissioning is complete, the person(s) who submitted the programme will be required to satisfy the Government that the approved programme has been implemented. A report should be submitted, detailing how the programme was carried out. As a guideline, this report should generally be submitted within four months of completion of the decommissioning work.

5.34 The report should include:

- confirmation that decommissioning has been carried out in accordance with the approved decommissioning programme or an explanation of any major variances from the programme;
- information on the outcome of decommissioning, including confirmation of sea-bed clearance;
- confirmation that appropriate bodies, including the United Kingdom Hydrographic Office, the Kingfisher Information Service at the Sea Fish Industry Authority, Hull (Seafish), and the International Maritime Organization, have been notified of removal and of any remains (see paragraph 7.26 for an explanation of what is required);
- confirmation that appropriate aids to navigation have been installed, where required, for any remains of installations which protrude above the sea-bed and are considered to be a danger to navigation;
- information on the actual costs of decommissioning and an explanation of any major variances from forecast costs.

5.35 Once the report has been submitted to DTI, the developer/owner should make it publicly available (for example, on the Internet).

Stage 8: monitoring of site

5.36 The final stage requires the developer to implement arrangements for monitoring, maintenance and management of the decommissioned site and any remains of installations or cables that may exist. The outcome of monitoring work should be reported to Government, together with proposals for any maintenance or remedial work that may be shown to be required. Monitoring reports should also be published by appropriate means (for example, on the Internet). If necessary, the monitoring programme will be adapted with time. The Government will agree with the developer when the monitoring programme may cease, taking account of any risks to navigation or other users of the sea which may be posed by remaining materials.

Deferral of decommissioning or repowering

5.37 In line with the UK's international obligations, the Government will be seeking to ensure that decommissioning of installations, or redundant parts of them, will be carried out as soon as reasonably

practicable. At the same time, it is recognised that disused facilities may represent important infrastructure and provide the means for welcome further development. Given the sustainable nature of offshore wind, repowering (by putting new turbines on old foundations or piles, for example) may be achievable.

5.38 The timing of decommissioning may also be influenced by: environmental impacts; market factors; vessel availability; phasing; synergy and co-ordination with other offshore work; and windows of opportunity, possibly spread across two or three seasons. In general, though, in view of the UK's obligations under UNCLOS, the Government will expect the removal, repowering or other re-use of installations not to be delayed unless a robust case demonstrates definite re-use opportunities or justifiable reasons for deferring decommissioning.

5.39 Any deferral from an agreed programme would need to be approved by the Secretary of State. Amongst the factors to be taken into account in considering the case for deferral will be the condition of the installation, the presence of any hazards, the environmental impact and the impact on other users of the sea.

6. Content of decommissioning programmes

Model framework for decommissioning programmes

6.1 The precise contents of a decommissioning programme may vary according to the circumstances. However, we suggest that the programme should follow the model framework set out below as far as it is practicable to do so:

1. Introduction
2. Executive summary
3. Background information
4. Description of items to be decommissioned
5. Description of proposed decommissioning measures
6. Environmental Impact Assessment (including measures to mitigate environmental impact)
7. Consultations with interested parties
8. Costs
9. Financial security
10. Schedule
11. Project management and verification
12. Sea-bed clearance
13. Restoration of the site
14. Post-decommissioning monitoring, maintenance and management of the site
15. Supporting studies

6.2 A description of the material to be provided under each heading of the model framework is given in Annex E. The content of the programme should be in line with the detailed guidance on decommissioning standards and financial security set out in the following two chapters of this guidance.

6.3 It is expected that the level of effort expended in preparing the decommissioning programme will be proportionate to the scale of the installation and the decommissioning challenge and risk it poses.

6.4 We expect that the detail provided under each heading in a decommissioning programme will reflect the level of uncertainty for that particular issue. For example, prior to construction, it should be possible to provide a detailed description of items to be decommissioned, but the precise time schedule for decommissioning may be subject to some uncertainty. That said, the programme should be sufficiently detailed, from the outset, to demonstrate that decommissioning has been fully considered and factored into design decisions, and that a viable decommissioning strategy has been developed. The programme should be informed by an Environmental Impact Assessment (EIA) (initially using the analysis already undertaken for the wider EIA done prior to consent of the installation). The costs should be estimated sufficiently well, from the outset, to enable the Government to make decisions about the acceptability of the developer's proposals for financial security.

7. Decommissioning standards

Overall approach

7.1 The decommissioning programme should be in line with the decommissioning standards set out in this chapter. The chapter covers: the general requirement to remove installations; exceptions from the general presumption in favour of removing the whole of an installation; sea-bed clearance; how installations are to be removed; how waste is to be dealt with; notification and marking of any remains; and monitoring, maintenance and management of the site after decommissioning.

7.2 The guidance on decommissioning standards is intended to comply with our international obligations, result in safe navigation, meet the needs of other users of the sea and protect the environment. At the same time, the Government wishes to encourage the development of offshore renewable energy installations, by ensuring that the standards are achievable and do not impose an excessive burden on the sector.

7.3 The guidance draws upon:

- International Maritime Organization (IMO) *'Guidelines and Standards for the Removal of Offshore Installations and Structures on the Continental Shelf and in the Exclusive Economic Zone'*³;
- Government guidance notes for decommissioning offshore oil and gas installations⁴ in compliance with OSPAR Convention for the Protection of the Marine Environment of the North-East Atlantic Decision 98/3;
- OSPAR guidance documents on offshore wind farms;
- the concept of Best Practicable Environmental Option (BPEO), that is the option which provides the most benefit or least damage to the environment as a whole, at an acceptable cost, in both the long and short term^{5 6}.

3 Guidelines and Standards for the Removal of Offshore Installations and Structures on the Continental Shelf and in the Exclusive Economic Zone, IMO, 19 October 1989, http://www.imo.org/Newsroom/contents.asp?doc_id=628&topic_id=227

4 Guidance Notes for Industry: Decommissioning of Offshore Installations and Pipelines under the Petroleum Act 1998, DTI, <http://www.og.dti.gov.uk/regulation/guidance/decommission.htm>

5 Guidelines for Environmental Risk Assessment and Management, Defra, September 2002, <http://www.defra.gov.uk/environment/risk/eramguide/08.htm>

6 The concept of BPEO is similar to that of BATNEEC - Best Available Technique not Entailing Excessive Cost – in that both criteria involve balancing the reduction in environmental risk with the practicability and cost of reducing the risk

7.4 Decisions on decommissioning programmes will be made on a case-by-case, site-by-site basis, having regard to the general principles and standards set out in this chapter. Different solutions may therefore be proposed for different installations on different sites, and even for different turbines or facilities within the same site or project, taking account of the specific circumstances and risks for each individual piece of infrastructure.

7.5 The principles and standards set out in this chapter apply to both installations in territorial waters and installations in the exclusive economic zone (i.e. the UK Renewable Energy Zone).

General requirement to remove installations

7.6 Considering our commitments under the United Nations Convention on the Law of the Sea (UNCLOS), and taking account of the International Maritime Organization (IMO) standards as well as the work of OSPAR, we believe it is generally accepted that the 'ideal' decommissioning programme involves removing the whole of all disused installations and structures. (We recognise that extending the life of the installation, or reusing the infrastructure in a beneficial way, will often be preferred, and we would wish to encourage this. Nonetheless, there is likely to come a time when the installation becomes 'disused', when extending its life or finding a beneficial reuse is no longer possible, and, at that point, a decommissioning programme should be carried out.)

7.7 Our guidance, therefore, starts from a general presumption in favour of the whole of all disused installations being removed and subsequently taken back to land for reuse, recycling, incineration with energy recovery or disposal at a licensed site. Exceptions from this general requirement will only be considered where there are very good reasons. This approach recognises that removal of installations allows the marine environment to be used again for other purposes, including safe navigation. It recognises that, if parts of an installation are not removed (for example, if foundations are cut such that they protrude above the sea-bed), they may pose a risk to navigation in the area.

Exceptions from the general presumption in favour of removing the whole of an installation

7.8 We acknowledge that there may be some particular circumstances (which are discussed further in the following paragraphs) in which removing all of a disused installation or structure is not the best solution.

7.9 Drawing on the IMO standards, we set out five situations in which other solutions (namely, leaving in place or partially removing an installation or structure) may be considered. However, even in these situations, items will not necessarily be allowed to remain on or in the sea-bed. Decisions will be made on a case-by-case basis, against the criteria set out in paragraph 7.11. The five situations are where:

- the installation or structure will serve a new use, whether for renewable energy generation or for another purpose, such as enhancement of a living resource⁷ (provided it would not be detrimental to other aims, such as conservation). In these situations, we would normally expect the decommissioning programme to set out the eventual decommissioning measures envisaged should the installation or structure finally become 'disused' and a point reached when extending its life or finding a beneficial reuse is no longer possible;
- entire removal would involve extreme cost. It is considered that design decisions should, as far as possible, result in installations which are affordable to remove, but it is recognised that some elements, such as deep foundations, may nonetheless be costly to remove;
- entire removal would involve an unacceptable risk to personnel;
- entire removal would involve an unacceptable risk to the marine environment;
- the installation or structure weighs more than 4000 tonnes in air⁸ (excluding any deck and superstructure) or is standing in more than 100 m of water and could be left wholly or partially in place without causing unjustifiable interference with other uses of the sea.

7.10 In certain locations, though, the IMO standards specify that an installation or structure should be entirely removed (without any exception). These locations are 'approaches to or in straits used for international navigation or routes used for international navigation through archipelagic waters, in customary deep-draught sea lanes, or in, or immediately adjacent to, routing systems which have been adopted by the Organization'.

7 It would not be acceptable for a decommissioning programme to propose leaving an installation in place on the grounds that it may, in the future, provide new surfaces for colonisation and the formation of an artificial reef.

8 This weight specification is taken directly from the IMO standards and is interpreted as applying to an individual device, and not to, say, an entire wind farm.

7.11 Again drawing on the IMO standards, any decision to allow some or all of an installation or structure to remain on or in the sea-bed will be based on a case-by-case evaluation of a range of matters, including, where appropriate:

- potential effect on the safety of surface or subsurface navigation;
- potential impact on other uses of the sea;
- potential effect on the marine environment, including living resources;
- costs of removal;
- risks of injury to personnel associated with removal.

7.12 A proposal to allow some of an installation or structure to remain on or in the sea-bed should also take account of the likely effect on these remaining elements of removing other parts of the installation. For example, removal of other parts of the installation may alter local hydrographic conditions in such a way as to affect the continued burial of, say, cables or foundations left behind.

7.13 By way of illustration, we set out here some **examples** of objects for which it may be possible to consider solutions other than complete removal. However, inclusion of these examples does not necessarily mean that these objects will be allowed to remain on or in the sea-bed in all cases, nor should the list be seen as an exhaustive list. Decisions will always be made on a case-by-case basis.

Structures which will be reused for renewable energy generation: where infrastructure, such as cabling, is intended to be reused for new renewable energy devices, it is likely to be preferable to leave the infrastructure in place for this new use. This may be the case, for example, at a test site for wave and tidal energy devices. In these situations, a decommissioning programme should nonetheless set out the eventual decommissioning measures envisaged when the infrastructure finally becomes 'disused'.

Structures which serve a purpose beyond renewable energy generation: where a structure has a design life and purpose beyond that of renewable energy generation, it may be valuable to leave the structure in place even after it has finished generating energy. An example might be a breakwater with integrated wave energy device. In these situations, we would normally expect the decommissioning programme to set out the eventual decommissioning measures envisaged should the installation or structure finally become 'disused'.

Foundations and structures below sea-bed level: where an installation's foundations extend some distance below the level of the sea-bed, removing the whole of the foundations may not be the best decommissioning option, given the potential impact of removal on the marine environment, as well as the financial costs and technical challenges involved. In these cases, the best solution might be for foundations to be cut below the natural sea-bed level at such a depth to ensure that any remains are unlikely to become uncovered. The appropriate depth would depend upon the prevailing sea-bed conditions and currents. Contingency plans should be included in the decommissioning programme, to describe the action proposed if the foundations do become exposed.

Cables buried at a safe depth below the sea-bed: where cables remain buried at a safe depth below the sea-bed, there may be a case for leaving them there, given the potential impact of removal on the marine environment, as well as the financial costs of removal. Concerns might arise if the cables were to become exposed by natural sediment dynamics, as exposed cables might pose a risk to other maritime users, with the possibility that fishing gear or an anchor might foul a cable. The option of cables being left in place may be considered if they are buried at a safe depth below the sea-bed, such that they do not pose a risk to other maritime users. The appropriate depth will depend upon the prevailing sea-bed conditions and currents. Where it is proposed to leave cables in place, cable burial depth should be monitored over and beyond the life of the installation, to assess the risk of cables becoming exposed after decommissioning. Contingency plans should be included in the decommissioning programme, to describe the action proposed if the cables do become exposed.

Scour protection materials: where scour protection materials have been used, there may be a case for leaving them there, to preserve any marine habitat established over the life of the installation, where they do not have a detrimental impact on the environment, conservation aims, the safety of navigation and other uses of the sea.

Sea-bed clearance

7.14 It will be important for the developer/owner to confirm that, following decommissioning, the site has been cleared, in accordance with the approved decommissioning programme, and to provide evidence that this has been achieved. Decommissioning programmes should set out the developer's proposals for

achieving this. Typically it will involve carrying out appropriate surveys, upon completion of decommissioning, to enable identification and subsequent recovery of any debris located on the sea-bed which may have arisen from the owner's/developer's activities and which may pose a risk to navigation, other users of the sea or the marine environment. This may include debris which was created during construction, operation, maintenance or decommissioning of the installation. (It may be appropriate for some material identified during survey, in particular archaeological material, to be left undisturbed.)

7.15 The area covered for debris clearance will be decided on a case-by-case basis, taking account of the guidance for oil and gas installations which specifies a 500 m radius around any installation as the minimum area to be covered for debris clearance. (It is recognised, though, that the nature and size of offshore renewable energy installations differs from that of oil and gas installations.)

7.16 We will generally expect to see an element of independent, third party involvement in providing evidence that the site has been cleared. Decommissioning programmes should set out the developer's proposals for achieving this. There are various forms of evidence which may be presented, subject to the outcome of the relevant Appropriate Assessment. Examples might include over-trawling of the site or the presence of an independent observer during site clearance operations.

7.17 The requirements for survey and independent involvement in sea-bed clearance are likely to depend on the circumstances of the case, taking account of the nature of the installation, the complexity and scale of the decommissioning operation, and the potential risks that may be posed by any debris left behind.

Method of removal

7.18 The guidance here is not prescriptive about the method which should be used to remove an installation, which will be influenced by, for example, the nature of the installation and the site. Removal techniques are also likely to evolve as experience (including experience of removing oil and gas installations) is gained and technology advances.

7.19 Thus, our guidance specifies general principles to be followed. The method of removal should have regard to:

- Best Practicable Environmental Option (BPEO), that is the option which provides the most benefit or least damage to the environment as a whole, at an acceptable cost, in both the long and short term. (In essence, the choice made should involve balancing the reduction in environmental risk with the practicability and cost of reducing the risk.)^{9 10}
- safety of surface and subsurface navigation
- other uses of the sea
- health and safety considerations

7.20 Choice of the BPEO should be informed by an Environmental Impact Assessment (EIA), as set out in Annex E, which provides a model framework for the content of the decommissioning programme. (Choice of the BPEO is also informed by consideration of costs.) The purpose of the EIA is to ensure that the environmental effects of the proposed decommissioning measures are fully considered before decommissioning takes place, and that appropriate measures are developed to avoid, reduce and, if possible, remedy any significant adverse effects indicated.

7.21 The EIA included in the original decommissioning programme (prepared prior to construction or operation) is expected to use the analysis already undertaken for the wider EIA done prior to consent of the installation. The decommissioning EIA should then be reviewed (and, if necessary, more detailed assessment undertaken) towards the end of the life of the installation, when a final review of the decommissioning programme is undertaken to finalise the decommissioning measures proposed. It is expected that the effort expended in preparing and reviewing the EIA should be proportionate to the scale of the decommissioning operation and the potential risks to the environment that it may pose.

7.22 Appropriate navigational marking should be used during the removal process to address any risks to mariners which may be posed by the decommissioning operation. Advice on appropriate marking may be sought from the appropriate General Lighthouse Authority.

9 Guidelines for Environmental Risk Assessment and Management, Defra, September 2002, <http://www.defra.gov.uk/environment/risk/eramguide/08.htm>

10 The concept of BPEO is similar to that of BATNEEC - Best Available Technique not Entailing Excessive Cost - in that both criteria involve balancing the reduction in environmental risk with the practicability and cost of reducing the risk

Contact details are:

For England and Wales:
The Director of Navigational Requirements
Trinity House
Tower Hill
London
EC3N 4DH
Email: navigation.directorate@thls.org

For Scotland:
Navigation Section
Northern Lighthouse Board
84 George Street
Edinburgh
EH2 3 DA
Email: navigation@nlb.org.uk

For Northern Ireland:
Head of Marine
Commissioners of Irish Lights
16 Lower Pembroke Street
Dublin 2
Eire
Email: marine@cil.ie

Management of waste

7.23 The generally preferred solution is for all installations to be reused, recycled, incinerated with energy recovery or disposed of on land.

7.24 We would not expect disposal of waste at sea to be acceptable to Government, in the light of Ministerial statements made in relation to the OSPAR Convention for the Protection of the Marine Environment of the North-East Atlantic.¹¹ However, we are able to consider proposals for:

- leaving elements of an installation in situ (as discussed in paragraphs 7.8 – 7.13);
- reuse of material at sea (for example, the reuse of inert material in construction projects).

7.25 The guidance here is not prescriptive about the choice of waste management option (in terms of when material should be reused, when recycled, when incinerated with energy recovery

¹¹ OSPAR Sintra Statement, 23 July 1998, <http://www.ospar.org/eng/html/md/sintra.htm>

and when sent for disposal at a licensed site). However, developers/owners should have regard to the waste hierarchy, which suggests that reuse should be considered first, followed by recycling, incineration with energy recovery and, lastly, disposal. The key requirement is that waste management must be carried out in accordance with all relevant legislation at the time. The main elements of this legislation (at the time of writing this guidance) are set out in Annex C.

Notification and marking of any remains

7.26 Those with a duty to secure the carrying out of the decommissioning programme should carry out the following actions:

- at least six weeks advance notification of the change in status of a decommissioned installation should be provided to the United Kingdom Hydrographic Office, so that mariners may be advised and appropriate amendments made to charts;

Contact details are:

The United Kingdom Hydrographic Office
Source Data Receipt & Assessment (SDRA)
Admiralty Way
Taunton
Somerset
TA1 2DN
Tel: 01823 337900
Email: hdcfiles@ukho.gov.uk

- in those cases where it is agreed that any part of an installation should remain in place, the position, surveyed depth and dimensions of the remains should be forwarded immediately to the Hydrographic Office (contact details above), for inclusion on Admiralty charts;
- notification of the change in status of a decommissioned installation, and details of any parts of an installation (including cables) which will remain in place following decommissioning, should be provided to the Kingfisher Information Service at the Sea Fish Industry Authority, Hull (Seafish), which enables relevant information to be provided to the fishing industry. The contact e-mail for notification is kingfisher@seafish.co.uk

- for any remains of installations which protrude above the sea-bed and are considered to be a danger to navigation, aids to navigation should, where required, be installed and maintained. The need for, and nature of, the aids to navigation to be employed should be discussed with DTI, with the appropriate General Lighthouse Authority (contact details are in paragraph 7.22) and with interested parties such as the fishing industry and other mariners. The developer/owner is responsible for ensuring the maintenance of any such aids to navigation;
- in those cases where it is agreed that any part of an installation should remain in place, this should be notified to the International Maritime Organization.

Contact details are:

International Maritime Organization
4 Albert Embankment
London
SE1 7SR
Tel: 020 7735 7611

Post-decommissioning monitoring, maintenance and management of the site

7.27 Where an installation is not removed entirely, some post-decommissioning monitoring will generally be expected. The objective of the monitoring is to identify any new or increased risks to navigation or other users of the sea which may be posed by remaining materials (for example, where cables or foundations may have become exposed due to natural sediment dynamics). Appropriate action should then be taken to mitigate the risks.

7.28 Decommissioning programmes should include a description of the proposed regime for post-decommissioning monitoring, maintenance and management of the site. The appropriate regime will be determined on a case-by-case basis, taking account of factors such as the likely scale, nature and condition of any remains, the risk that any remains below the sea-bed may become uncovered, and proximity to maritime activity.

7.29 If necessary, the monitoring regime may be adapted over time (as agreed with Government). Relevant data from construction, operation and decommissioning of the site should be considered in determining whether and how to adapt the monitoring regime.

7.30 In general, we would expect the frequency of monitoring to tail off with time (though this may not always be the case if the initial monitoring reveals more significant risks than originally envisaged). The Government will agree with the developer when the monitoring programme may cease, taking account of any risks to navigation or other users of the sea which may be posed by remaining materials.

7.31 An example of a monitoring regime, for elements left in situ beneath the sea-bed, might be a post-decommissioning survey at the time of completion of decommissioning work, with further surveys at, for example, three years and eight years after final decommissioning activity. (Requirements would always be considered on a case-by-case basis, however, taking account of the specific risks posed in each case.) Whether there was a need for further monitoring would be considered in the light of the results of these surveys.

7.32 Monitoring reports should be submitted to Government, together with proposals for any maintenance or remedial work that may be required. The reports should also be published by appropriate means (for example, on the Internet).

7.33 If a developer/owner has proposed to remove an object entirely, but the decision has been taken by Government that it should be left in situ (for example, for environmental reasons), then the developer/owner would not be expected to be responsible for post-decommissioning monitoring, maintenance and management of this object.

8. Financial security

Overall approach

8.1 The Government's objective, in the light of its international obligations, is to ensure that installations are decommissioned appropriately. We want to make sure that developers have taken account of their decommissioning liabilities at the beginning of their projects and made adequate provision to ensure that sufficient funds will be available to meet their liabilities. The Government is seeking to reduce, to an acceptable level, the risk of liabilities falling to the public purse in the event of default by developers whilst, at the same time, not wishing to impose a higher cost than necessary on the offshore renewables industry.

8.2 Our general approach is that the "polluter pays" and that the business responsible for the installation is best placed to manage and mitigate the costs and risks associated with decommissioning. The developer can take on board decommissioning issues from the outset of the project, from the concept and design stage through to the contractual arrangements and warranties associated with construction and operation.

Risk to Government

8.3 Whilst it would not be appropriate for the Government to bear the liabilities associated with decommissioning, nor simply to accept the risk that developers may default on their liabilities, it may be appropriate for the Government to take on some of the *risk* associated with *potential* default. The risk to Government is that, in relation to any particular offshore renewable energy installation, the participating companies may not have sufficient assets to pay for decommissioning or that, although such companies have sufficient assets, the assets are outside UK jurisdiction, and the powers of enforcement available under the Energy Act 2004 may not be exercisable so as to ensure that companies comply with their obligations. In such cases, the UK Government's international obligations might mean that the costs then fall on the public purse.

8.4 DTI commissioned Climate Change Capital (CCC) to assist it in identifying a range of suitable means by which security could be obtained by Government to protect against default on decommissioning liabilities, without inhibiting unnecessarily the

development of the offshore renewable energy industry. A copy of their report is available from:
<http://www.climatechangecapital.com/pages/newsdetail.asp?id=151&>

8.5 CCC looked at the likely circumstances of default and levels of risk during the three distinct phases of an installation's life: construction, operation and decommissioning. They concluded that the risk to Government of default is relatively low during the construction phase, increases during the operation phase and is highest for the decommissioning phase. Given the industry's high capital costs and very low operating costs, CCC expect that an offshore wind installation, once financed and built, will probably be able to cover its decommissioning costs, even at a late stage in a project's life. Nevertheless, a few critical factors suggest that a financial security that does not impose a significant burden on the sector would be advisable in order to manage the uncertainty of the risk. In particular:

- uncertainty over the magnitude of decommissioning costs;
- the risk of technical failure during operation, particularly given the difficulty of the marine environment;
- potential future transfer of assets and uncertainty over the creditworthiness of asset owners.

Guiding principles

8.6 Under the Energy Act decommissioning provisions, it is for the responsible person to submit details of the security they propose to provide (if any) with their decommissioning programme. It is not our intention, therefore, to be prescriptive about the type of security which must be provided. However, we have established some principles to provide a policy framework against which financial security decisions can be taken:

- the Government's policy is to encourage the development of the offshore renewable energy industry, recognising its contribution to meeting Government objectives for sustainability and the environment and security of supply;
- there is a presumption that developers/owners will meet the costs of decommissioning and be responsible for the liabilities they have created (the "polluter pays" principle);
- the Government has a duty to ensure that the taxpayer is not exposed to an unacceptable risk of default in meeting costs associated with decommissioning;

- the Secretary of State will expect to see that effective and transparent arrangements are in place to ensure the performance of decommissioning obligations;
- the Secretary of State will wish to consider the viability of recovering expenditure incurred in carrying out a decommissioning programme (if necessary) under Section 110(5) of the Energy Act 2004, and the likely extent of the costs involved.

Examples of acceptable security

8.7 There may be a number of acceptable forms of security and developers' proposals will be considered on a case by case basis. However, the following would normally be acceptable.

Cash

Cash set aside up front to cover expected decommissioning liabilities would reduce the risk to Government to a negligible level and would therefore be acceptable.

Letters of Credit

Commonly used in the oil and gas sector, an irrevocable letter of credit, issued by a Prime Bank,¹² with a "draw down facility" which would operate if the instrument was not, or could not be, renewed is likely to be acceptable to the Government.

Bonds

Bonds, whereby an underwriter (either an appropriate Prime Bank or insurance company) guarantees an amount equal to the decommissioning sum in return for an arrangement fee and premium are likely to be acceptable to the Government (assuming they could be relinquished in a similar manner to the letters of credit).

¹² For these purposes, "Prime Banks" are banks established in an OECD country which have an AA rating or better as defined by Standard and Poors, Aa2 rating or better as defined by Moodys or an equivalent rating by another recognised rating agency. In certain situations we might be prepared to accept a lower rating depending on the particular circumstances of the case (the level of decommissioning costs involved is likely to be a significant factor).

Early/Mid Life and Continuous Accrual Decommissioning Funds

A secure, segregated decommissioning fund that accrues early in, during the middle of, or over the life of an installation would normally be acceptable, as would a fund that starts accruing in the mid life of the installation, provided the fund is completed ahead of the end of life of the installation. The earlier payments are made and completed, the better the Government is insulated from risk, since payments would occur when expected revenues are high and the installation would be able to accommodate larger payments if necessary (for example, to cover anticipated increases in decommissioning costs or earlier than expected decommissioning).

The Government will wish to be assured that such funds will be available to HMG in the event of insolvency. This is likely to be easier for companies to demonstrate if they enter into a joint trust arrangement as part of a group rather than singly. (We are exploring further the mechanics of potential funds and statutory versus non-statutory trusts.) Developers may wish to learn from the ongoing experience of the UK Offshore Operators Association (UKOOA) who are developing Decommissioning Security Agreements in relation to oil and gas decommissioning.

8.8 Other mechanisms, or combinations of them, might also be acceptable, such as **insurance** (for example, to cover the uncertainty element of decommissioning costs) and possible **collective schemes** such as an **industry fund**, which was highlighted by some respondents to the consultation exercise carried out between June and September 2006. DTI would be happy to consider proposals for an industry-run fund and to assess whether such a fund would provide adequate protection for HMG against default on decommissioning liabilities.

Examples of unacceptable security

8.9 The following would normally be unacceptable.

Parent Company Guarantees (PCGs)

Parent Company Guarantees (PCGs) are unlikely to be acceptable security as the need for the security to be called upon is most likely to arise in cases where the group as a whole is in financial difficulties. Moreover, in such circumstances, if the guarantor cannot or will not pay up under the guarantee, there is a risk

that, where the parent company is overseas, no easily accessible assets are available to cover the defaulter's decommissioning costs. This might therefore expose the Secretary of State to the difficulties involved in trying to recover decommissioning costs from overseas parent companies. PCGs also suggest a requirement to assess the financial viability and asset location of the parent company on a regular basis, which would be relatively difficult and burdensome for the Secretary of State to do.

Late Accrual Decommissioning Fund

A decommissioning fund that began accruing late into the life of an installation is unlikely to be acceptable. If early decommissioning were required and a developer defaulted on its liabilities, the extent of the Government's liability would be higher than under other fund scenarios because the actual accrual period is very short (so less, or even no, funds would have been put aside). The amount which has to be paid annually into the decommissioning fund is also larger – because of the short accrual period – but is concentrated in the last years of operation when the amount of cash generated by the installation is smaller and more uncertain. The nature and timing of the fund could itself precipitate default by increasing financial distress.

Wave, tidal and other marine technologies

8.10 As for offshore wind, it is important that developers of marine technologies and demonstrator devices take account of decommissioning liabilities at the beginning of their projects and make adequate provision to ensure that sufficient funds will be available to meet those liabilities. However, given the early stage of development of this sector, it is difficult to provide guidance on appropriate forms of security (if any) for experimental, demonstrator and pre-commercial marine devices. Decisions on whether (and, if so, what) financial security will be required will therefore be taken on a case by case basis, taking account of the guiding principles above (paragraph 8.6), and the policy reviewed in the light of further experience.

8.11 For marine technologies which have progressed to commercial operation, financial security will be expected. The same guiding principles (paragraph 8.6) will be applied and, in addition, the examples of acceptable and unacceptable security described above (paragraphs 8.7 – 8.9) will be relevant.

Independent Audit

8.12 Independent audit of estimated decommissioning costs and of the financial security proposed or available to meet them may be required, using independent third party experts approved by DTI. The need for, timing and frequency of such audits will be determined on a case by case basis.

Developer/owner responsibility

8.13 The developer/owner remains responsible for decommissioning in accordance with an approved decommissioning programme, whatever the financial security mechanism which may have been agreed. If, for example, an accrual fund has been agreed and decommissioning is required before the end of the expected operational life, and before sufficient decommissioning funds have been accrued, the developer/owner remains liable for making up the shortfall. Statutory provisions make it an offence not to decommission in accordance with a notice issued by the Secretary of State and he has powers to take remedial action and recover any expenditure where developers fail to do so.

8.14 Developers may also be required by the Secretary of State to increase their financial provision for decommissioning if reviews suggest that the security proposed or available is insufficient to meet their decommissioning liabilities or the risk of default. (The process for undertaking reviews is covered in more detail in chapter 5.)

9. Residual liability

9.1 The persons who own an installation at the time of its decommissioning will normally remain the owners of any residues. The Government does not intend to take any action to remove any residual liability for these residues from the owners. Any residual liability is thus expected to remain with the owners in perpetuity. In addition, those with a duty to secure the carrying out of the decommissioning programme will remain responsible for complying with any conditions attached to the Secretary of State's approval of the decommissioning programme. This is consistent with the regime for decommissioning offshore oil and gas installations.

9.2 We would expect an exception to be made, however, in a situation where a developer /owner has proposed to remove an object entirely, but the decision has been taken by Government that it should be left in situ (for example, for environmental reasons). In that situation, we would not expect the developer/owner to remain liable for the object.

9.3 In practice, an installation which has been safely and effectively decommissioned, in accordance with its decommissioning programme, should not give rise to problems in the future. Provided that there are no problems, we do not expect there to be a need for the owner to take any action once the agreed post-decommissioning monitoring, maintenance and management regime has been completed.

9.4 If, however, problems with a decommissioned installation do become apparent, we would expect to require the owner to take appropriate action. For example, this might be the case if buried foundations become uncovered, so as to pose a risk to navigation.

9.5 Any claims for compensation by third parties, arising from damage caused by any remains, will be a matter for the owners and the affected parties and will be governed by the general law.

9.6 The government does not expect to require financial security for residual liability. The Crown Estate may have small financial requirements to cover their risks in respect of residual liability issues, such as third party claims and consequential loss. DTI and The Crown Estate will be happy to work with the industry to seek to develop an industry fund to minimise the financial impact of residual liability requirements. If an appropriate fund were established, The Crown Estate would be prepared to take on the owner's residual liability at the end of The Crown Estate lease.

10. Industry cooperation and collaboration

10.1 The Government is keen to encourage industry cooperation and collaboration at the decommissioning stage. At this stage, any competitive pressures are likely to be less than at the development stage, which presents an opportunity for companies to share decommissioning expertise. This might range from a general exchange of information and ideas to a more structured collaboration on specific decommissioning projects and proposals. Opportunities to collaborate with companies in the offshore oil and gas sector might also be pursued.

Annex A: International regime and obligations

United Nations Convention on the Law of the Sea

1 The UK's international obligations on the decommissioning of offshore installations have their origins in the United Nations Convention on the Law of the Sea (UNCLOS), 1982. The Convention entered into force in 1994 and the UK acceded to it in 1997.

2 Article 60 of UNCLOS sets out countries' requirements in respect of abandoned or disused installations or structures in the exclusive economic zone.

"Any installations or structures which are abandoned or disused shall be removed to ensure safety of navigation, taking into account any generally accepted international standards established in this regard by the competent international organization. Such removal shall also have due regard to fishing, the protection of the marine environment and the rights and duties of other States. Appropriate publicity shall be given to the depth, position and dimensions of any installations or structures not entirely removed."

International Maritime Organization standards

3 The competent international organization for the purposes of Article 60 of UNCLOS is the International Maritime Organization (IMO). The IMO adopted, in 1989, 'Guidelines and Standards for the Removal of Offshore Installations and Structures on the Continental Shelf and in the Exclusive Economic Zone'.¹³ The UK is therefore required, under UNCLOS, to take these IMO standards into account in removing abandoned or disused installations and structures in the exclusive economic zone.

4 The IMO standards require abandoned or disused offshore installations or structures, on any continental shelf or in any exclusive economic zone, to be removed, except in certain

¹³ Guidelines and Standards for the Removal of Offshore Installations and Structures on the Continental Shelf and in the Exclusive Economic Zone, IMO, 19 October 1989, http://www.imo.org/Newsroom/contents.asp?doc_id=628&topic_id=227

specified circumstances. Removal should be performed as soon as reasonably practicable after abandonment or permanent disuse of the installation or structure. Removal should be performed in such a way as to cause no significant adverse effects upon navigation or the marine environment.

5 The IMO standards specify that an installation or structure need not be entirely removed in the following circumstances.

If the installation (excluding the deck and superstructure) weighs more than 4,000 tonnes in air or is standing in more than 100m of water, a coastal State may determine that it may be left wholly or partially in place where this would not cause unjustifiable interference with other uses of the sea.

A coastal State may determine that an installation or structure may be left wholly or partially in place where it will serve a new use, such as enhancement of a living resource.

A coastal State may determine that an installation or structure need not be entirely removed where entire removal:

- is not technically feasible (although the IMO standards stipulate that, from 1998 onwards, the design and construction of all installations and structures placed on a continental shelf or exclusive economic zone should be such that entire removal would be feasible); or
- would involve extreme cost; or
- would involve an unacceptable risk to personnel; or
- would involve an unacceptable risk to the marine environment.

6 In certain locations, the IMO standards specify that an installation or structure should be entirely removed (without any exception). These locations are 'approaches to or in straits used for international navigation or routes used for international navigation through archipelagic waters, in customary deep-draught sea lanes, or in, or immediately adjacent to, routing systems which have been adopted by the Organization'.

7 The IMO standards stipulate that the decision to allow some or all of an installation or structure to remain on the sea-bed should be based on a case-by-case evaluation of a range of matters:

- any potential effect on the safety of surface or subsurface navigation or other uses of the sea;
- the rate of deterioration of the material and its present and possible future effect on the marine environment;

- the potential effect on the marine environment, including living resources;
- the risk that the material will shift from its position at some future time;
- the costs, technical feasibility and risks of injury to personnel associated with removal;
- the determination of a new use or other reasonable justification for allowing some or all of the installation or structure to remain on the sea-bed.

8 Prior to giving consent to partial removal of any installation or structure, the coastal State should satisfy itself that any remaining materials will remain on location on the sea-bed and not move under the influence of waves, tides, currents, storms or other foreseeable natural causes so as to cause a hazard to navigation.

9 The process for allowing some or all of an installation or structure to remain on the sea-bed should include the following actions:

- specific official authorisation identifying the conditions under which some or all of the installation or structure will be allowed to remain on the sea-bed;
- adoption of a specific plan to monitor accumulation and deterioration of material left on the sea-bed to ensure there is no subsequent adverse impact on navigation, other uses of the sea or the marine environment;
- advance notice to mariners of the specific position, dimensions, surveyed depth and markings of the installation or structure;
- advance notice to appropriate hydrographic services to allow for timely revision of nautical charts;
- notification of non-removal or partial removal to the IMO.

10 Where the coastal State consents to partial removal of any installation or structure, the IMO standards specify that:

- the coastal State should ensure that legal title to installations and structures is unambiguous and that responsibility for maintenance and the financial ability to assume liability for future damages are clearly established;
- the position, surveyed depth and dimensions of material remaining should be indicated on nautical charts and, where necessary, the remains should be properly marked with aids to navigation;
- periodic monitoring should be conducted.

OSPAR Convention for the Protection of the Marine Environment of the North-East Atlantic

11 The 1992 OSPAR Convention guides international cooperation on the protection of the marine environment of the North-East Atlantic. The UK is one of 15 Contracting Parties. OSPAR Decision 98/3,¹⁴ adopted to implement OSPAR's offshore oil and gas industry strategy, sets out binding requirements for the disposal of disused offshore oil and gas installations.

12 Whilst there is no equivalent Decision for offshore renewable energy installations, OSPAR has produced guidance documents on offshore wind-farms, incorporating ideas on their decommissioning. In particular, the paper *'Problems and Benefits Associated with the Development of Offshore Wind-Farms, Biodiversity Series, OSPAR Commission 2004'* proposes some aspects to be taken into consideration in developing guidance for the removal/disposal of offshore wind-farms. This paper says that:

“when decommissioning wind energy installations (end of operational life-time use or premature termination of the project), the wind energy installations (including foundation) and cables should be removed completely and disposed of (recycling) on land. In order to avoid hindrances for e.g. fisheries, the piles should at least be cut off far enough beneath the seabed to ensure that the remaining parts will not be exposed by natural sediment dynamics.”

13 In terms of **how** the structures should be removed, the OSPAR paper says that:

“techniques which minimise impacts on the environment (e.g. benthos, fish) including re-suspension of the sediment should be applied for the removal.”

¹⁴ OSPAR Decision 98/3 on the Disposal of Disused Offshore Installations, <http://www.ospar.org/eng/html/welcome.html>

Annex B: Summary of decommissioning provisions in the Energy Act 2004

Note

1 This summary is intended to provide a helpful description of the key decommissioning provisions in the Energy Act 2004. However, it should not be relied upon to be a comprehensive description of the legislation.

Introduction

2 The Energy Act 2004 (Part 2, Chapter 3) sets out a comprehensive statutory scheme for the decommissioning of offshore renewable energy installations. The scheme applies to territorial waters in or adjacent to England, Scotland and Wales (between the mean low water mark and the seaward limits of the territorial sea) and to waters in the UK Renewable Energy Zone (including that part adjacent to Northern Ireland territorial waters).

3 Where an installation is to be (or is) wholly or partly in an area of Scottish waters or in a Scottish part of a Renewable Energy Zone, the Secretary of State will consult the Scottish Ministers before acting.

Requirement to prepare decommissioning programmes (Section 105)

4 Under the terms of the Act, the Secretary of State may require a person who is proposing to construct, extend, operate or use an offshore renewable energy installation or its related electric lines (or is already doing so) to submit a decommissioning programme for the installation. The Secretary of State must also consider how he will exercise his decommissioning powers in determining whether to give a consent for an offshore generating activity under Section 36 of the Electricity Act 1989.

5 The requirement to submit a decommissioning programme may be imposed on more than one person, in which case a joint programme must be submitted. The requirement may be imposed at any point, from the point (prior to construction) at which it is

judged likely that one of the statutory consents required will be given, through to the point at which an installation has begun to be decommissioned.

6 The Secretary of State may require specified consultations to be carried out before the decommissioning programme is submitted.

7 The decommissioning programme submitted must include:

- measures to be taken for decommissioning the relevant object (renewable energy installation or related electric line);
- an estimate of the expenditure likely to be incurred in carrying out those measures;
- provision for determining the times at which, or the periods within which, those measures will have to be taken;
- provision about restoring the place to the condition that it was in prior to the construction of the object (where it is proposed that the object will be wholly or partly removed from that place);
- provision about whatever continuing monitoring and maintenance of the object will be necessary (where it is proposed that the object will be left in position or will not be wholly removed).

8 The Secretary of State may also require other information to be submitted with the decommissioning programme. This may include details of the (financial) security (if any) that the person proposes to provide.

Approval of decommissioning programmes (Section 106); failure to submit or rejection of decommissioning programmes (Section 107)

9 The Secretary of State may: approve the programme as it stands; approve the programme with modifications and/or subject to conditions (after giving the person who submitted it an opportunity to make representations); reject the programme and require a new one; or prepare a decommissioning programme himself and recover the expenditure incurred from the person concerned.

10 The Secretary of State may approve a programme subject to a condition that the person who submitted the programme provides

security in relation to the carrying out of the programme, at such time and in accordance with such requirements as the Secretary of State may specify.

11 Where more than one person has submitted a programme, different conditions (for example, in relation to financial security) may be imposed upon different persons.

12 The Secretary of State must act without unreasonable delay in reaching his decision as to whether to approve or reject a programme.

Reviews and revisions of decommissioning programmes (Section 108)

13 The Secretary of State must, from time to time, conduct such reviews of a decommissioning programme as he considers appropriate. Either the Secretary of State or the person who submitted the programme may propose modifications to it, including modifications to any conditions attached to the programme (for example, relating to financial security). The decision is made by the Secretary of State, after considering any representations made to him by the people concerned.

14 Either the Secretary of State or the person who submitted the programme may propose to relieve a person of his duty to carry out the decommissioning programme or to impose that duty upon a new person (either in addition to or in substitution for another person). (This might happen when there is a change in ownership of the installation.) The decision is made by the Secretary of State, after considering any representations made to him by the people concerned. When the duty is imposed upon a new person, that person may be required to provide security.

Carrying out of decommissioning programmes (Section 109); default in carrying out decommissioning programmes (Section 110)

15 The person who submitted the decommissioning programme (or any new person upon whom the duty has been imposed) must ensure that the programme is carried out. It is an offence for a person to take any decommissioning measures unless in accordance with the approved programme or with the agreement of the Secretary of State.

16 The Secretary of State may require remedial action if the programme is not carried out in any particular respect. If this is not done, the Secretary of State may himself secure the remedial action and recover the expenditure incurred from the person concerned.

Regulations about decommissioning (Section 111)

17 The Secretary of State may make regulations relating to decommissioning of offshore renewable energy installations. Regulations may include, for example, prescribed standards for decommissioning and provision about the security that a person may be required to provide.

Duty to inform Secretary of State (Section 112)

18 When a person becomes responsible for an installation (or related electric line) he must notify the Secretary of State. This would happen when, for example, a person makes a proposal to construct, extend, operate or use an installation, or begins to construct, extend, operate, use or decommission an installation. (This would apply whether it was a proposal for a new installation or whether the person was acquiring an existing installation.) In the case of a new installation, notification is not required until after at least one of the statutory consents has been given or applied for.

Offences relating to decommissioning programmes (Section 113)

19 A person guilty of an offence is liable: on statutory conviction, to a fine not exceeding the statutory maximum; on conviction on indictment, to imprisonment for a term not exceeding two years or to a fine, or to both. In any proceedings against a person for default in carrying out a decommissioning programme, it would be a defence to show that he exercised due diligence to avoid the contravention in question.

Power to impose charges to fund energy functions (Section 188)

20 The Secretary of State may make regulations requiring charges to be paid to him to fund the carrying out of his energy functions (including functions relating to decommissioning of offshore renewable energy installations).

Annex C: Summary of other legislation relevant to decommissioning activities

This Annex provides a summary of the main items of legislation, in addition to the Energy Act 2004, which may apply to decommissioning activity. The summary may not be exhaustive as individual cases will differ. Developers/owners responsible for decommissioning should discuss requirements with the relevant Departments and Agencies responsible for the legislation.

Coast Protection Act (CPA) 1949

This Act, as extended by the Continental Shelf Act 1964, contains provisions for the safety of navigation. For offshore renewable generating installations (but not cables) in England and Wales, these provisions have been subsumed into the Electricity Act 1989 (Section 36B) and therefore no longer apply in England and Wales. However, for projects in Scotland, before an installation can be placed on the UK Continental Shelf, the consent of the Secretary of State for the Department for the Environment, Food and Rural Affairs is required under section 34 of the Act. The standard form of consent normally contains a condition relating to the decommissioning of the facilities to the effect that, when they fall into disuse, no obstruction or danger to navigation should be caused or likely to result. The satisfactory completion of a decommissioning programme approved under the Energy Act 2004 should satisfy any removal conditions attached to a Coast Protection Act consent.

Food and Environment Protection Act (FEPA) 1985

A licence is required, under Part II of the Food and Environment Protection Act 1985 (FEPA) as amended, for the deposit of substances or articles within United Kingdom controlled waters, either in the sea or under the seabed unless exempt under the Deposits in the Sea (Exemptions) Order 1985 as amended.

For the deposit of any substances or articles in respect of activities which are not exempt (such as deposits made in connection with offshore decommissioning activity) a FEPA licence may be required. For the waters adjacent to England and Wales, FEPA is administered by the Marine Consents and Environment Unit of

the Department for Environment, Food and Rural Affairs, and in waters adjacent to Northern Ireland by the Department of the Environment (Northern Ireland). For such deposits in waters adjacent to Scotland, the Fisheries Research Services, Mann Laboratory in Aberdeen, which is an Executive Agency of the Scottish Executive Environment and Rural Affairs Department, is the responsible licensing authority, except in relation to operations falling under Part VI of the Merchant Shipping Act 1995 where the licensing authority is the Department for Transport and operations relating to the exploration and exploitation of offshore oil and gas beyond “controlled waters”, where the licensing authority is the Department for Trade and Industry. These “controlled waters” extend to 3 nautical miles from a defined coastal baseline within the meaning of section 30A(1) of the Control of Pollution Act 1974.

Water Resources Act 1991

Under the Water Resources Act 1991, it is an offence in England and Wales to cause or knowingly permit any poisonous, noxious or polluting matter or any solid waste matter to enter any “controlled” waters. Controlled waters are groundwaters, streams, rivers, lakes, estuaries and coastal waters. Under the Act, coastal waters in this context extend to three miles from a defined baseline in England and Wales. Anyone wishing to discharge wastewater effluent or solid waste matter into controlled waters in England and Wales must therefore first make an application to the Environment Agency for a consent to discharge. If discharges are made without a consent, or consents are breached by failure to meet specific consent conditions, this is an offence and the polluter could be liable to prosecution under the Act.

In Scotland, the Control of Pollution Act 1974 (COPA), as amended by the Water Act 1989, establishes similar offences and, as in England and Wales, coastal waters extend to three nautical miles from the baselines within the meaning of section 30A of COPA. Other named activities under Crown control are outlined in the Continental Shelf Act 1964.

In Northern Ireland, a similar system is operated under the Water (Northern Ireland) Order 1999 to protect the quality of ground and surface waters, including coastal waters to the 3 mile limit. Regulation of the discharge consent regime is carried out by the Environment and Heritage Service.

Environmental Impact Assessment (EIA) Regulations

Environmental Impact Assessments required as part of a decommissioning programme should meet the requirements set out in the relevant EIA regulations. These are the Electricity Works (Environmental Impact Assessment)(England and Wales) Regulations 2000, and the Electricity Works (Environmental Impact Assessment)(Scotland) Regulations 2000, together with any successor regulations.

Conservation (Natural Habitats etc.) Regulations 1994, Conservation (Natural Habitats etc.) Regulations (Northern Ireland) 1995 and the forthcoming Offshore Marine Conservation (Natural Habitats etc.) Regulations

Under the EU Habitats and Birds Directives (Directives 92/43/EEC on the conservation of natural habitats and 79/409/EEC on the conservation of wild birds), a European-wide network of sites has been (and continues to be) established to promote the conservation of habitats, wild animals and plants, both on land and at sea. These sites are subject to statutory protection measures contained in the Conservation (Natural Habitats etc.) Regulations 1994, the Conservation (Natural Habitats etc.) Regulations (Northern Ireland) 1995 and the forthcoming Offshore Marine Conservation (Natural Habitats etc.) Regulations. The protection contained therein includes requirements for steps to be taken to avoid sites being adversely affected by plans or projects taking place either on a Natura 2000 site or outside of its boundaries. Any plan or project which either alone or in combination with others would be likely to have a significant effect on a site must be subject to an Appropriate Assessment of its implications for the site's conservation objectives.

Candidate Special Areas of Conservation are protected under the Habitats Regulations. Once offshore marine sites are selected and submitted to the European Commission under the Offshore Marine Conservation Regulations, candidate offshore marine sites will be similarly protected under its provisions. As a matter of policy, the same protection is extended to potential Special Protection Areas in respect of new developments.

A decommissioning programme will be subject to an Appropriate Assessment of its implications for the site, in view of the site's conservation objectives, unless it can be concluded, on the

basis of objective information, that the programme will not have a significant effect, either individually or in combination with other plans or projects. Where this cannot be concluded, the impacts that may be caused by decommissioning will need to be addressed in an Appropriate Assessment done before the decommissioning programme is approved. It is unlikely that Appropriate Assessments done prior to consent of an installation would cover decommissioning impacts sufficiently well for this purpose. A separate Appropriate Assessment, focused on decommissioning impacts, would therefore be needed.

If the decommissioning Appropriate Assessment is carried out at the start of an installation's life, we would also expect this Appropriate Assessment to be reviewed towards the end of the installation's life, in the light of any changes to (or more detailed information on) the decommissioning measures proposed and/or changes to the site likely to be affected.

Even if a decommissioning Appropriate Assessment was not carried out at the start of an installation's life (for example, because it was possible for significant effects to be excluded, on the basis of objective information, at that stage), an Appropriate Assessment might nevertheless be needed before the decommissioning programme is put into action, if it is not possible at that stage to rule out significant effects on a protected site. This might be due to changes in the programme and/or changes to the site likely to be affected.

Environmental Protection Act 1990, Waste Management Licensing Regulations 1994 and Control of Pollution (Amendment) Act 1989

Article 4 of the Waste Framework Directive (2006/12/EC) requires Member States to 'ensure that waste is recovered or disposed of without endangering human health and without using processes or methods which could harm the environment, and in particular without risk to water, air or soil, or to plants or animals [and] without causing a nuisance through noise or odours'.

Permitting

The permitting requirements of the Waste Framework Directive have been transposed into UK law through the waste management licensing system under Part II of the Environmental Protection Act 1990 and through the Waste Management Licensing Regulations 1994 (as amended) (the 1994 Regulations). The Directive also

gives Member States discretion to provide exemptions from the requirement for a permit and the Department for Environment, Food and Rural Affairs (Defra) has exercised this discretion to encourage the recovery of waste with the provision of a number of exemptions under Regulation 17 of and Schedule 3 to the 1994 Regulations.

The Environment Agency is the competent authority for waste activities in England and Wales and they can be contacted on 08708 506 506. (More information can also be found at www.environment-agency.gov.uk). In determining a licence, the Agency needs to be satisfied that the activities will not cause harm to human health or pollute the environment and the site is managed by a fit and proper person.

The Environmental Permitting Programme (EPP) launched a consultation, in September 2006, on options for a streamlined environmental permitting and compliance system which includes proposals for a single, streamlined environmental permit for Pollution Prevention Control and waste management licensing activities in England and Wales. It is proposed the new system will be introduced in April 2008.

Duty of Care

The Environmental Protection Act 1990, Section 34, sets out the Waste Duty of Care (DoC). This relates to decommissioning activities in that the process will inevitably involve the production of controlled waste, and the DoC will apply to those who 'import, produce, carry, keep, treat or dispose of controlled waste' from the moment it arrives ashore. Those people are required to take all reasonable measures to –

- i) prevent any contravention by another person of waste management controls (in effect, to prevent them from fly-tipping the waste);
- ii) prevent the escape of the waste from their control or that of any other person; and
- iii) when the waste is transferred, ensure that: (a) it is transferred only to an authorised person (e.g. a registered waste carrier or someone who holds a licence to recover or dispose of the waste); (b) there is written description of the transferred waste on a waste transfer note, signed by both parties and kept by both parties for 2 years.

For full guidance see Defra's website <http://www.defra.gov.uk/environment/waste/legislation/duty.htm> or contact the Environment Agency for advice (08708 506506).

Carriage and transfer of waste

Sections 1 & 2 of the Control of Pollution (Amendment) Act 1989 are really a subset of the Duty of Care (see 3 iii) above). When the waste produced by decommissioning activities arrives ashore it will require transportation to a site for disposal or recovery. This Act sets out the statutory obligations of those who transport waste. Establishments and undertakings that collect or transport waste on a professional basis or that arrange for the disposal or recovery of waste (dealers or brokers) must be registered with the Environment Agency as waste carriers.

For full guidance see Defra's website
<http://www.defra.gov.uk/environment/waste/legislation/duty.htm>
or contact the Environment Agency for advice (08708 506506).

Pollution Prevention and Control Regulations 2000

These Regulations, which were made under the Pollution Prevention and Control Act 1999, implement the Directive in Integrated Pollution Prevention and Control (Directive 96/61/EC).

The system of Integrated Pollution Prevention and Control (IPPC) applies an integrated environmental approach to the regulation of certain industrial activities. This means that emissions to air, water (including discharges to sewer) and land, plus a range of other environmental effects, must be considered together. It also means that regulators must set permit conditions so as to achieve a high level of protection for the environment as a whole. These conditions are based on the use of the "Best Available Techniques" (BAT), which balances the costs to the operator against the benefits to the environment. IPPC aims to prevent emissions and waste production and, where that is not practicable, reduce them to acceptable levels. IPPC also takes the integrated approach beyond the initial task of permitting, through to the restoration of sites when industrial activities cease.

It is likely that the recycling, recovery, incineration or disposal of waste from decommissioned offshore renewable energy devices will be carried out in installations that fall within the terms of the Pollution Prevention and Control Regulations 2000. Operators of these installations are required to obtain an operating permit from the regulators who are: in England and Wales, the Environment Agency or local authority; in Scotland, the Scottish Environment Protection Agency; and in Northern Ireland, the Environment and Heritage Service.

Further information (including a practical guide) is available from the regulators, the Department for Environment, Food and Rural Affairs, the Scottish Executive and the Department of the Environment in Northern Ireland, and from the following websites:

<http://www.defra.gov.uk/environment/ppc/ippcguide/index.htm>

http://www.scotland.gov.uk/library3/environment/PPC_Practical_Guide_v2.pdf

<http://www.ehsni.gov.uk/environment/industrialPollution/ippc.shtml>

Hazardous Waste Regulations 2005

Wastes that exhibit hazardous properties may be classified as hazardous waste in England and Wales. These wastes are marked with an asterisk in the List of Waste Regulations 2005. Hazardous waste is subject to the requirements of the Hazardous Waste Regulations 2005, which require the notification of most premises that produce hazardous waste to the Environment Agency and the tracking of the waste from the point of production until it reaches a suitably permitted waste management facility by way of a consignment note.

<http://www.opsi.gov.uk/si/si2005/20050894.htm>

<http://www.opsi.gov.uk/si/si2005/20050895.htm>

Transfrontier Shipment of Waste Regulations 1994

The international movement of waste is controlled by means of Council Regulation (EEC) No. 259/93 on the supervision and control of shipments of waste within, into and out of the European Community (the "WSR"). The WSR applies the Basel Convention on the control of hazardous wastes and their disposal and OECD Decision C(2001)107/Final on the control of transboundary movements of wastes destined for recovery operations within the Community. The transfrontier Shipment of Waste Regulations 1994 introduces administrative procedures, penalties and offences linked to the WSR into UK law. Guidance on application of the WSR in the UK is provided by the UK Management Plan for Export and Imports of Waste 1996. The Regulations are enforced by the Environment Agency in England and Wales, the Scottish Environment Protection Agency in Scotland, and the Environment and Heritage Service of the Department of the Environment in Northern Ireland. The WSR and related UK legislation applies to decommissioned offshore installations. Operators should consult the appropriate Agency when considering decommissioning activities that involve transboundary movements of waste which originate from the UK, including those which originate from the UK Continental Shelf.

Radioactive Substances Act 1993

Anyone who receives radioactive sources or radioactive waste for disposal is subject to the requirements of the Radioactive Substances Act 1993 (RSA 93). Under this Act they must have an authorisation from the appropriate regulatory body (the Environment Agency in England and Wales; the Scottish Environment Protection Agency in Scotland; and the Environment and Heritage Service in Northern Ireland) for the accumulation or disposal of radioactive waste or be able to demonstrate compliance with the conditions contained in specific exemption orders. The Act does apply to offshore installations and the preparation of a decommissioning programme should identify whether the selected disposal route requires such an authorisation and that the selected facility has one. It is likely that new disposal routes will require an application for authorisations.

Transfrontier Shipment of Radioactive Waste Regulations 1993

Where an installation contains radioactive waste as defined in RSA 93, and it is proposed that the installation should be taken to another country for reuse, recycling or final disposal on land, the provisions of the Transfrontier Shipment of Radioactive Waste Regulations 1993 (TFSRWR 93) will apply. TFSRWR 93 provides a system of authorising shipments of radioactive waste between Member States and into and out of the European Union. Authorisation is granted by the relevant regulatory body in the UK (the Environment Agency in England and Wales; the Scottish Environment Protection Agency in Scotland; and the Environment and Heritage Service in Northern Ireland), subject to shipment approval being granted by the competent authority in the country of destination. If such waste is subsequently to be returned to the UK for final disposal, authorisation would be required from the competent authority in the country in which the waste now resided who would seek approval from the relevant UK regulator for its return.

Health and Safety at Work etc. Act 1974

The 1974 Act applies to all working activities in Great Britain and to specified activities in UK waters, including the construction, operation and decommissioning of offshore renewable energy installations.

The Act places general duties upon employers and others in control of places of work to ensure, so far as is reasonably practicable, the health, safety and welfare of their employees

while they are at work, as well as the health and safety of all other people who may be put at risk because of the work activity. The Act provides for subsidiary regulations setting out more detailed requirements for particular activities. The main regulations applying to the decommissioning of offshore renewable energy installations are identified below. The Act and regulations are enforced by the Health and Safety Executive (HSE), who can provide more detailed advice on their requirements:

<http://www.hse.gov.uk/>

HSE Info line: 0845 345 0055

Construction (Design and Management) Regulations 1994

These Regulations apply to “construction” work, which includes the installation, decommissioning, demolition or dismantling of structures provided to produce offshore renewable energy. The Regulations set out the relative responsibilities for health and safety of all key persons involved, including clients, designers, contractors and planning supervisors. The planning supervisor must prepare a health and safety plan for any construction project and must notify HSE of any project longer than 30 days or involving more than 500 person days of work.

The Construction (Health, Safety and Welfare) Regulations 1996

These Regulations set out detailed safety requirements for construction sites. This includes requirements for safe places of work, structural stability, emergency procedures, training and welfare facilities.

Provision and Use of Work Equipment Regulations 1998 (PUWER)

These Regulations deal with the safe use of work equipment and machinery. The equipment provided must be ‘suitable’ for its purpose in respect of health or safety risks. Work equipment must also be maintained in a safe state.

Lifting Operations and Lifting Equipment Regulations 1998 (LOLER)

These Regulations set out safety standards for lifting equipment and for the management of lifting operations. They require all lifting operations to be properly planned and supervised. They also require thorough examinations of lifting equipment and training of personnel involved in lifting operations.

Management of Health and Safety at Work Regulations 1999

These Regulations set out requirements for the management of health and safety risks in all workplaces. They require employers to carry out risk assessments, to have arrangements for planning and monitoring health and safety measures, to have access to competent assistance, to make emergency arrangements and to provide information and training.

Export controls

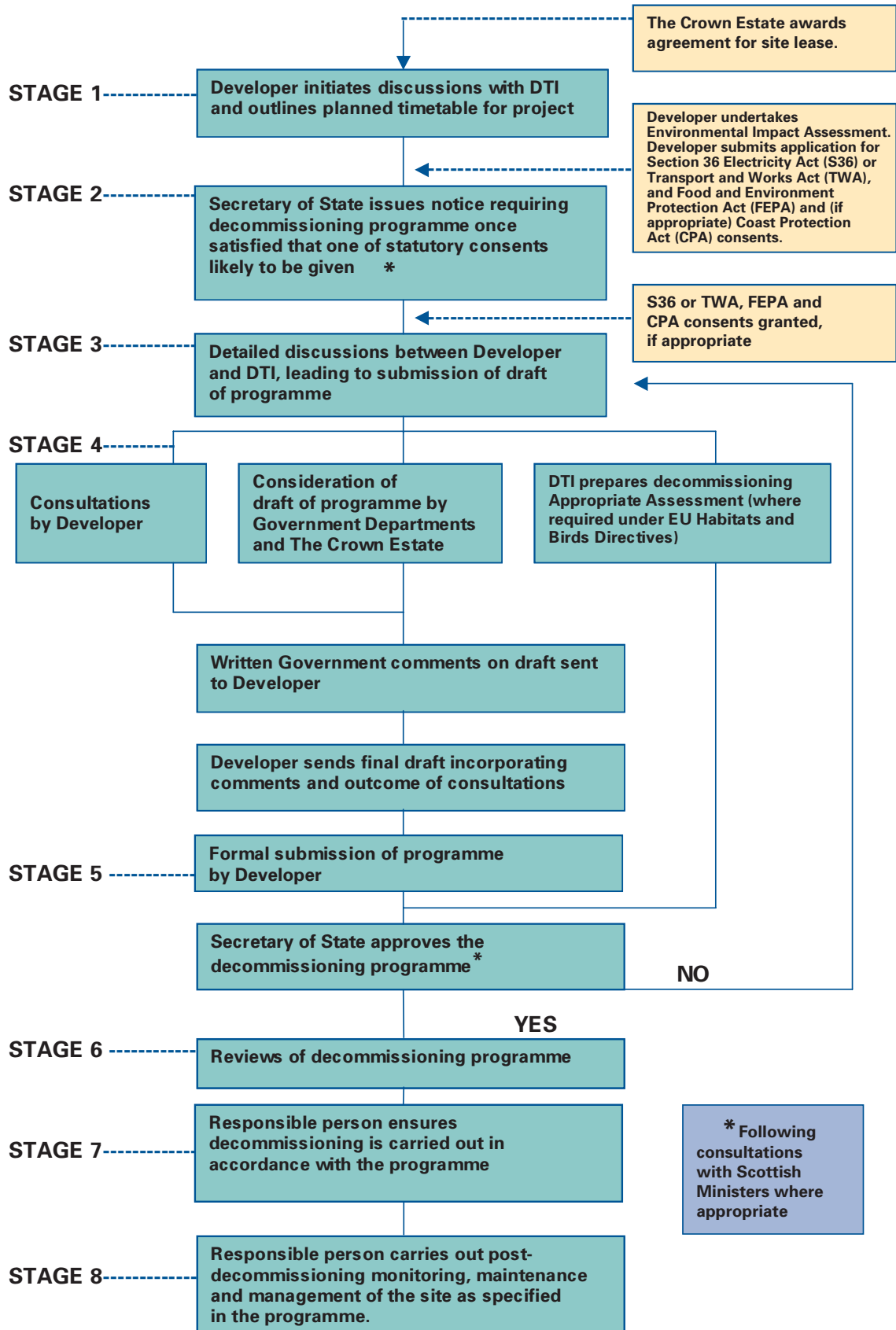
The export of installations and/or associated equipment from the United Kingdom may be subject to United Kingdom export controls. The Export Control Organisation of the DTI is the competent authority in this matter.

An export licence is likely to be required if the goods proposed for export are listed in either Schedule 1 or 2 of the Export of Goods, Transfer of Technology and Provision of Technical Assistance (Control) Order 2003 or in Council Regulation (EC) No1334/2000, as amended.

In addition, the Export of Radioactive Sources (Control) Order 2006 prohibits the export from the UK of certain high activity radioactive sources without a valid export licence.

The DTI Export Control Organisation website <http://www.dti.gov.uk/europeandtrade/strategic-export-control/index.html> provides information relating to the lists of items considered to be subject to control (military and dual-use) and other general information on export controls including details of how to apply for any necessary export licence(s).

Annex D: Decommissioning programme process: key activities



Annex E: Contents of a decommissioning programme

Presentation

The programme should be presented in a form that allows ready updating and change. Each draft should be dated, and pages should be numbered.

Content

The content of the programme is likely to be based on the following model framework (which is intended as a guideline, rather than a rigid requirement).

1. Introduction

(Included in initial programme, updated as necessary when programme is reviewed)

A brief introduction should be included, indicating that the decommissioning programme is being submitted for approval in accordance with the requirements of the Energy Act 2004. The introduction should state the companies that are a party to the programme and describe their ownership status.

2. Executive Summary

(Included in initial programme, updated as necessary when programme is reviewed)

A summary should be provided, highlighting the essential features of the proposed decommissioning programme.

3. Background Information

(Included in initial programme, updated as necessary when programme is reviewed)

Relevant background information should be provided, supported by diagrams, including:

- the layout of the facilities to be decommissioned;
- the relative location, type and status of any other adjacent facilities (e.g. telephone cables, pipelines and platforms) which would have to be taken into consideration;
- information on prevailing weather, sea states, currents, sea-bed conditions, water depths, etc, relevant to consideration of the proposed decommissioning programme;
- any fishing, shipping and other activity in the area;
- the names and locations of any Special Areas of Conservation (under the Habitats Directive) and/or Special Protection Areas (under the Birds Directive) that may be affected by the decommissioning programme;
- any other background information relevant to consideration of the draft decommissioning programme.

4. Description of Items to be Decommissioned

(Included in initial programme, updated as necessary when programme is reviewed)

A full description should be provided, supported by diagrams, of all items associated with the generating station to be decommissioned, including:

a) Renewable Energy Installations

- renewable energy devices, including any foundations, support structures, towers, anchor blocks, turbines and ancillary equipment;
- offshore substations, including foundations, support structures, topside structures and ancillary equipment;
- meteorological monitoring masts;
- materials which may have been placed on the sea-bed, for example for scour protection, including rock, grout bags, sandbags, mattresses.

b) Related lines

- electric lines/cables, including inter-turbine cables, inter-substation cables and export cables.

5. Description of Proposed Decommissioning Measures

(Included in initial programme, with more detail added as appropriate when final review of programme takes place towards end of installation's life)

This section should describe the proposed measures to be taken for decommissioning the installation. The level of detail provided may be improved upon over time. However, the programme should be sufficiently detailed, from the outset, to demonstrate that decommissioning has been fully considered and factored into design decisions and that a viable decommissioning strategy has been developed. This section should cover:

- **Any planned phasing/integration.**

Consideration may be given to the potential for beneficial phasing/integration of decommissioning activity between operators, e.g. within a particular geographic area or specialist type of work, in order to realise any economies of scale that may be possible.

- **Proposed method of removal.**

This should have regard to:

- Best Practicable Environmental Option (BPEO), that is the option which provides the most benefit or least damage to the environment as a whole, at an acceptable cost, in both the long and short term;
- safety of surface and subsurface navigation;
- other uses of the sea;
- health and safety considerations.

- **Proposed waste management solutions.**

The key requirement is that waste management must be carried out in accordance with all relevant legislation at the time. There is a general presumption in favour of disused installations being removed and subsequently reused, recycled, incinerated with energy recovery or disposed of (at a licensed site) on land. Developers/owners should have regard to the waste hierarchy, which suggests that reuse should be considered first, followed by recycling, incineration with energy recovery and, lastly, disposal.

This section should specify:

- which elements of the installation will be taken back to land for reuse, recycling, incineration with energy recovery or disposal;
- which (if any) materials from the installation may be reused at sea.

- **Details of any items which may be left in situ following decommissioning.**

There is a general presumption in favour of disused installations being removed and subsequently reused, recycled, incinerated with energy recovery or disposed of on land. However, if it is proposed to leave some or all of any item on or in the sea-bed, the proposal must set out how the item meets at least one of the five situations in which (based on the IMO standards) non removal or partial removal may be considered. The five situations are where:

- the installation or structure will serve a new use, whether for renewable energy generation or for another purpose, such as enhancement of a living resource¹⁵ (provided it would not be detrimental to other aims, such as conservation). In these situations, we would normally expect the decommissioning programme to set out the eventual decommissioning measures envisaged should the installation or structure finally become 'disused' and a point reached when extending its life or finding a beneficial reuse is no longer possible;
- entire removal would involve extreme cost. It is considered that design decisions should, as far as possible, result in installations which are affordable to remove, but it is recognised that some elements, such as deep foundations, may nonetheless be costly to remove;
- entire removal would involve an unacceptable risk to personnel;
- entire removal would involve an unacceptable risk to the marine environment;

¹⁵ It would not be acceptable for a decommissioning programme to propose leaving an installation in place on the grounds that it may, in the future, provide new surfaces for colonisation and the formation of an artificial reef.

- the installation or structure weighs more than 4000 tonnes in air¹⁶ (excluding any deck and superstructure) or is standing in more than 100 m of water and could be left wholly or partially in place without causing unjustifiable interference with other uses of the sea.

The proposal must explain why non removal or partial removal is considered to be the best option, through evaluation of the following matters (drawn from the IMO standards):

- potential effect on the safety of surface or subsurface navigation;
 - potential impact on other uses of the sea;
 - potential effect on the marine environment, including living resources;
 - costs of removal;
 - risks of injury to personnel associated with removal.
- **Predicted degradation, movement and stability of any remains.**

6. Environmental Impact Assessment

(Included in initial programme, with more detailed assessment undertaken, if necessary, when final review of programme takes place towards end of installation's life)

An Environmental Impact Assessment (EIA) should inform the decommissioning programme. This should assess the potential effects of the proposed decommissioning measures on the environment, and describe the measures envisaged to avoid, reduce and, if possible, remedy any significant adverse effects indicated.

The EIA included in the original decommissioning programme (prepared prior to construction or operation) is expected to use the analysis already undertaken for the wider EIA done prior to consent of the installation. The decommissioning EIA should then be reviewed (and, if necessary, more detailed assessment undertaken) towards the end of the life of the installation, when a final review of the decommissioning programme is undertaken to finalise the decommissioning measures proposed. It is expected

¹⁶ This weight specification is taken directly from the IMO standards and is interpreted as applying to an individual device, and not to, say, an entire wind farm.

that the effort expended in preparing and reviewing the EIA should be proportionate to the scale of the decommissioning operation and the potential risks to the environment that it may pose.

The final EIA should aim to:

- identify and assess potential impacts on the environment, including exposure of biota to contaminants associated with the installation, other biological impacts arising from physical effects, conflicts with the conservation of species, with the protection of their habitats, or with mariculture, and interference with other legitimate uses of the sea;
- identify and assess potential impacts on amenities, the activities of communities and on future uses of the environment;
- describe the measures envisaged to avoid, reduce and, if possible, remedy any significant adverse effects indicated.

Use of Explosives

As part of the final EIA, it will be necessary to assess the potential impacts of the use of any explosives on marine life, in particular marine mammals. The Habitats and Birds Directives may be of relevance here too. The use of explosives will only be accepted in exceptional circumstances. The EIA should justify why it is necessary to use explosives, explaining the alternatives which have been considered. It should describe the potential impacts of the proposed use of explosives and the proposed mitigation strategy. Guidelines for explosive use are available from the JNCC (for the latest version, contact Zoe Crutchfield, Senior Offshore Advisor, Dunnet House, 7 Thistle Place, Aberdeen, AB10 1UZ, tel 01224 655716, email zoe.crutchfield@jncc.gov.uk).

7. Consultations with Interested Parties

(Included in initial programme, updated as necessary when programme is reviewed)

The decommissioning programme should describe the consultation process employed. It should provide a summary of the consultations undertaken with interested parties and explain the extent to which their views have been taken into account in the programme. Relevant correspondence should be annexed to the programme.

8. Costs

(Included in initial programme, updated as necessary when programme is reviewed)

The programme should include an overall cost estimate, in £ sterling, of the proposed decommissioning measures. It should explain the basis on which the estimate is made, including a breakdown into major component parts. All elements of the decommissioning programme should be covered in the cost estimate, including:

- removal of the installation;
- management of the waste;
- conduct of any surveys to be undertaken before or after decommissioning;
- post-decommissioning monitoring, maintenance and management of the site, where an installation is not entirely removed.

It is recognised that there may be concerns about including commercially sensitive cost data in a decommissioning programme, and placing such data in the public domain, before contracts are finalised. If this is the case, it should be possible to agree an approach that satisfies these concerns.

9. Financial security

(Included in initial programme, updated as necessary when programme is reviewed)

The programme should set out the financial security which the companies that are party to the programme propose to provide.

10. Schedule

(Outline information included in initial programme, updated as necessary when programme is reviewed)

Details of the proposed decommissioning time scale should be given, including a schedule showing the dates at which the various stages of the decommissioning are expected to start and finish. Final details of timing are only required towards the end of the life of the installation, when a review of the decommissioning programme is undertaken to finalise the decommissioning

measures proposed. The original decommissioning programme (prepared prior to construction) should set out, as far as possible, when decommissioning is expected to take place and explain how the decommissioning schedule will eventually be determined.

11. Project Management and Verification

(Only included when final review of programme takes place towards end of installation's life)

The programme should provide information on how the Operator will manage the implementation of the decommissioning programme and provide verification to Government concerning progress and compliance. This should include a commitment to submit a report, detailing how the programme was carried out. As a guideline, this report should generally be submitted within four months of completion of the decommissioning work. This section of the decommissioning programme is only required towards the end of the life of the installation, when a review of the decommissioning programme is undertaken to finalise the decommissioning measures proposed. It need not be included in the original decommissioning programme (prepared prior to construction)

12. Sea-bed clearance

(Included in initial programme, updated as necessary when programme is reviewed)

This section should set out proposals for confirming that, following decommissioning, the site has been cleared. Typically, this will involve carrying out appropriate surveys, upon completion of decommissioning, to enable identification and subsequent recovery of any debris located on the sea-bed which may have arisen from the owner's/developer's activities and which may pose a risk to navigation, other users of the sea or the marine environment.

Whilst the area covered for debris clearance will be decided on a case-by-case basis, account should be taken of the guidance for oil and gas installations which specifies a 500m radius around any installation. Identification of debris may be conducted by side scan sonar, with an ROV deployed to investigate and recover any potential hazards identified.

We will generally expect to see an element of independent, third party involvement in providing evidence that the site has been

cleared. Decommissioning programmes should set out the developer's proposals for achieving this. There are various forms of evidence which may be presented, subject to the outcome of the relevant Appropriate Assessment. Examples might include over-trawling of the site or the presence of an independent observer during site clearance operations.

13. Restoration of the Site

(Included in initial programme, updated as necessary when programme is reviewed)

The programme should describe how it is proposed to restore the site, as far as possible and desirable, to the condition that it was in prior to construction of the installation.

14. Post-decommissioning Monitoring, Maintenance and Management of the Site

(Outline proposals included in initial programme, updated as necessary in the light of relevant data from construction, operation, decommissioning and post-decommissioning monitoring of the site)

Where any remains are to be left in place, the programme should include a description of the proposed post-decommissioning monitoring, maintenance and management of the site. There should be a commitment to report the outcome of this work to Government.

15. Supporting Studies

(Included in initial programme, updated as necessary when programme is reviewed)

Where supporting studies have been undertaken they should be listed within the programme.



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