

FLOWW Best Practice Guidance for Offshore Renewables Developments: Recommendations for Fisheries Liaison

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Recommendations for Fisheries Liaison

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1. INTRODUCTION

1.1. The Fishing Liaison With Offshore Wind And Wet Renewables Group (FLOWW)

The Fishing Liaison with Offshore Wind and Wet Renewables Group (FLOWW) was set up in 2002 to foster good relations between the fishing and offshore renewable energy sectors and to encourage co-existence between both industries. FLOWW's objectives are to enable and facilitate discussion on matters arising from the interaction of the fishing and offshore renewable energy industries, to promote and share best practice, and to encourage liaison with other sectors in the marine environment.

FLOWW comprises organisations with an interest in offshore renewables and the fishing industry, being comprised of fishing industry bodies, offshore renewable developers and consultants, government agencies and The Crown Estate. The group is facilitated by a secretariat funded by The Crown Estate.

A current list of members of the FLOWW group can be found on the [FLOWW website](#).

1.2. Background to this guidance

The offshore renewables energy sector is developing rapidly to meet the future energy needs of the nation, reduce the nation's reliance on carbon based fuels and help secure security of supply. As the industry develops, it must continue to be aware of others who make the majority of their living from the sea, on both a local and national level. In 2007, FLOWW identified the need for best practice guidance to inform developers and the commercial fishing community on the need for effective communication at all stages in the development and operation of offshore renewable energy installations (OREI). The first "Fishing Liaison Best Practice guidance for offshore renewables developers" was published in May 2008, when the offshore renewable energy industry was still in its infancy. In the following five years there has been continued growth in the offshore renewable energy industry, in part driven by European and domestic climate change legislation, and government renewable energy targets. As a result, FLOWW has agreed to revise and update the guidance.

This guidance is intended for OREI developers and the commercial fishing industry, and draws on the extensive experience gained through the development of the first three offshore wind leasing rounds (Rounds 1, 2 and 3) and the construction and operation of the first two rounds, as well as the emerging wave and tidal sector. This guidance has been compiled in a spirit of co-operation, with the intention of forming the basis for long-term co-existence between both industries. Throughout the document, key messages have been highlighted in grey boxes.

In developing OREIs, there is a need for effective liaison between both industries, in order to fully understand potential impacts, co-existence opportunities and displacement considerations, and guide appropriate mitigation responses. There is a responsibility on the fishing industry to provide accurate data and information to the developer, as well as working with the developer to properly minimise the impact on the fishing sector. In turn, developers will be responsible for keeping the fishing industry properly informed of activities from the start of the planning phase into the operation and maintenance of a fully working OREI. Both industries are committed to achieving co-existence; however, both also recognise that to achieve this they have to work closely together.

1.3. Applicability

The guidance covers all current and future OREI developments across the UK, including:

- Offshore wind projects currently covered in the existing programmes (Rounds 1, 2, extensions, 3, and Scottish Territorial Waters (STW));
- Any future offshore wind rounds in UK territorial waters or the UK Renewable Energy Zone (REZ);
- Offshore wind test and demonstration sites; and
- Wave and tidal stream rounds and test and demonstration sites.

The guidance also covers all aspects of projects, including substations, cabling (array and export) and grid connections. There are a variety of types of renewable energy devices covered by this guidance; illustrative examples are given in Appendix 1.

This guidance does not cover tidal barrage developments. This is due to the fundamentally different kind of infrastructure involved, and the fact that UK renewable energy policy has not yet provided a clear indication on the types of development that may come forward. It is anticipated that similar best practice guidance will be produced for tidal barrages, as and when required.

This guidance has been developed for the benefit of developers of OREIs and fisheries stakeholders. This also includes Offshore Transmission Owners (OFTO) as an OFTO will ultimately own the offshore transmission assets (i.e. the offshore substation, export cable and onshore substation), and will be responsible for their operation. In some cases, an OFTO may be brought in at the development stage to plan, design and/or construct the offshore transmission assets, in which case the OFTO will be responsible for ensuring the fishing industry is consulted and involved in the development stages.

This guidance will cover some aspects of offshore grid, but there will be overlap with fishing guidelines for the cables industry, which is administered by Subsea Cables UK. This guidance therefore complements guidelines issued by Subsea Cables UK and the oil and gas industry, links for which are provided in the relevant sections.

1.4. Fishing activities in UK waters

Throughout this document the term ‘fishing industry’ is used and refers to the fishing and fisheries industry in its broader context, including static gear, which falls into three distinct categories – netting, lining and fishing with traps for shellfish. The term ‘fisheries stakeholders’ is used to refer to those involved in and closely connected to the fishing industry, and potentially affected by the development of OREIs. This guidance is intended for the commercial fishing industry, and is not intended to apply to recreational and leisure fishing pursuits.

All developers should be aware that there are many different types of fishing activity, using different types of equipment. Due to the difference in activities and equipment used, concerns from each section of the fishing community may be different. Key activities around the UK are illustrated in Appendix 2.

The UK fishing industry is a geographically widespread business, comprising of an international fleet within the Exclusive Fishing Zone. Cumulative impacts may therefore occur from the presence of several OREIs in

areas fished, as well as transboundary impacts of developments on the fleets crossing international boundaries.

1.5. Roles in renewable energy and fisheries

There are a number of organisations and stakeholders who have responsibilities in developing offshore renewable energy and in fishing liaison.

The **government** sets energy policy, based on global climate change agreements. An overall climate change and carbon emission reduction target has been set for the UK by the UK Government through the Climate Change Act 2008. In addition to being covered by this Act the devolved administrations, i.e. Scottish Government, the Welsh Government and the Northern Ireland Assembly are taking forward their own climate change policies and plans and developing their own legislation such as the Climate Change (Scotland) Act 2009. The governments must balance these climate change and energy policy interests with their relevant policies on the sustainable management of the fishing industry.

The Crown Estate, as manager of the seabed, helps to implement government energy policy, by leasing areas of seabed for renewable energy projects. It also invests in renewable energy to obtain returns that benefit the public purse. They lease the seabed for aquaculture, as well as other sectors, such as aggregates, cables and pipelines and moorings.

Consenting bodies issue the various types of licences and planning consents required for the implementation of renewable energy projects. These consents and administering bodies are summarised in Section 3.

Statutory advisers give independent advice on consenting to the consenting bodies. This includes advice on safety, navigation, natural heritage protection, archaeology and many more marine management issues.

Developers are companies that plan, design and construct renewables developments; they can include utility companies, dedicated project developers, and technology developers. Once a project has been commissioned and becomes operational, some of these developers may continue to own the project, and then become operators. In some other cases, a developer may then sell their interests in a project to another company to operate.

Subcontractors are employed by developers to survey, construct or maintain the OREI. This could include ecological and geotechnical surveys at the planning stage, or construction and maintenance works.

OFTOs operate the transmission assets (see section 1.3 above) and may also plan and/or construct the assets. They are also likely to employ subcontractors for maintenance during the operational phase.

There are several renewables **trade associations**, such as RenewableUK and the Renewable Energy Association who support the development of offshore renewable energy. They carry out a number of functions, including facilitating business to business engagement opportunities and advocating the views of their members to governments and other stakeholders. They also commission research to support the understanding of the sector, and represent their members on groups that aim to co-ordinate activities, such as FLOWW.

Fishermen's Federations are an umbrella for many fishermen's associations, fish producers' organisations and other groups and individuals. These bodies represent fishermen in discussions that affect fisheries management and policy at the local to international level. Although they do not represent all fishermen groups, they do maintain contact details on local groups and can facilitate relationships.

Producers' Organisations and Fishermen's Associations typically represent fishermen at a local and/or regional level and are useful points of contact for facilitating liaison with local fishermen.

The **Shellfish Association of Great Britain** is the shellfish industry's trade body which aims to assist and promote the sustainable development of the shellfish industry in the UK. Membership is composed of shellfish farmers, fishermen, fishermen's Associations, processors, commercial traders and retail companies involved in the shellfish industry.

Inshore Fisheries and Conservation Authorities (IFCAs) in England are committees of local authorities and people from across the different sectors that use or are knowledgeable about the inshore marine area, such as commercial and recreational fishermen, environmental groups and marine researchers. They are tasked with the sustainable management of inshore sea fisheries resources in their local area. There are ten IFCA districts; a link to a map showing the boundaries of the IFCAs can be found in Appendix 3.

Inshore Fisheries Groups (IFGs) are non-statutory bodies in Scotland and aim to improve the management of inshore fisheries out to 6 nautical miles. Six pilot IFGs were established in 2009; following this pilot, six new IFGs will cover all of the Scottish coast and will take forward and develop inshore fisheries management plans in their respective areas. Links to further information and a map of the IFGs' areas can be found in Appendix 3.

Independent fishermen not affiliated to organisations will also count amongst fisheries stakeholders for some OREI developments; therefore port visits are essential to ensure that the widest possible network of contact is established.

The Kingfisher Division of Seafish liaises with offshore industries, to provide fishermen with the latest information of offshore surface and subsea structures and activities. This includes maps and electronic fishing plotter files representing the oil & gas, subsea cable, renewable energy and marine aggregate industries. Fortnightly news is published via the Kingfisher Bulletin and fishermen receive positional data of offshore structures biannually. Links to further information are provided throughout this document and contact details can be found in Appendix 3.

1.6. Review of the guidance

This voluntary guidance will be reviewed on a regular basis by FLOWW in association with RenewableUK and other industry associations and updated when appropriate.

FLOWW will monitor the implementation of the guidance at their regular meetings. Members will report back annually on an anonymous (i.e. not project specific) basis, identifying lessons learned and best practice as the guidelines are utilised. FLOWW will discuss any potential solutions that could be employed for any identified challenges or contradictions and incorporate these in future revisions of the guidance.

1.7. How to use this guidance

This guide aims to provide sufficient information to allow OREI developers and the fishing industry to have constructive discussions about the potential impacts and interactions between the sectors in the planning, construction and operation of OREIs.

The document has been split into sections that apply to different stages of project planning and development. The first three sections aim to provide an overview of both industries and the OREI development regime, including the process for consenting projects in the UK. Sections 4 – 6 provide guidance on liaising from the planning phase to the operational phase, while Sections 7 – 11 outline specific issues that concern the fishing industry, providing guidance to both sectors towards achieving mutual understanding and resolving any potential disputes that may arise.

Section 1 provides an introduction to the guide, and outlines what activities are applicable in using this guide. There is an overview of the technology used by each industry. The organisations and stakeholders that may be involved in the discussions between parties are also described.

Section 2 describes the process of obtaining a lease for a site from The Crown Estate, and how this ties into the planning of an OREI project.

Section 3 describes the statutory consenting process for OREIs, and key legislation that governs the consenting regime. This section will assist in understanding at which points in the consultation process there will be informal and formal consultation with fishermen on the consenting of OREIs.

Section 4 provides guidance on the setting up of an effective liaison structure during all phases of an OREI, assisted by the appointment of key liaison roles.

Section 5 provides proposals for best practice on formal and information consultation during the planning and consenting phase, and includes suggestions for the data collection and the information that developers would need to obtain from the fishing community in order to fully appreciate potential impacts and mitigation.

Section 6 contains guidance on fishing liaison activities that may be applicable during the construction and operational phases of an OREI.

Section 7 provides guidance on considerations for identifying mitigation and co-existence opportunities and the development of a mitigation and co-existence plan.

Section 8 outlines the process for developers to apply for safety zones around an OREI for construction and operation, and the factors that a developer should consider in applying for a safety zone, including discussions with the fishing community.

Section 9 provides information that developers should consider when contemplating using fishing vessels for guard vessel and/or survey work during the planning, construction or operational phase.

Section 10 describes actions to be undertaken by both fishing vessels and OREI developers/operators when there is fouling and/or loss of gear, and the process for reporting such acts.

Section 11 describes general principles for claims due to damage or loss of fishing gear that is attributable to OREIs.

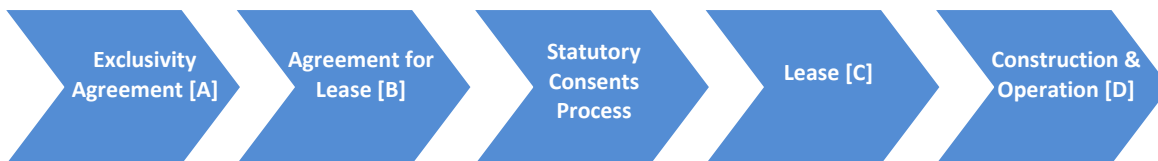
The document is also supported by **Appendices**, including key contacts for the fishing and renewable energy industry, information required by the UKHO and Kingfisher Division of Seafish, and key considerations for dealing with removal of fixed gear during surveys or construction.

2. THE UK OFFSHORE RENEWABLES LEASING PROCESS

The Crown Estate is a landed estate under The Crown Estate Act 1961 and acts as manager of the seabed within the 12nm limit and of the rights to natural resources on the continental shelf (excluding fossil fuels) on behalf of the Nation. As such, The Crown Estate has played a major role in the development of the offshore renewable energy industry in the UK. A lease from The Crown Estate is required in order to construct an OREI development and The Crown Estate has issued such leases (or the pre-cursors of them) in a series of 'leasing rounds' since 2001, when the first round of offshore wind farm leasing (Round 1) commenced. A lease from The Crown Estate is equivalent to 'landowner permission' to construct an OREI and does not replace the requirement for a developer to obtain all the necessary statutory consents and licences required for the construction of the OREI.

2.1. The leasing process

The Crown Estate's leasing process for renewable energy developments comprises at least two stages. The principle agreements comprise an Agreement for Lease (AFL) (stage B in the diagram below), which provides a conditional right for the developer to request a Lease (stage C), for a seabed site and/or seabed rights. In some cases, The Crown Estate includes a further initial stage, in the form of an exclusivity agreement (stage A).



For more detail on the different stages, together with a description of the rights awarded at each stage and information as to how the leasing and statutory consents process interact, please see <http://www.thecrownestate.co.uk/media/387737/role-in-offshore-renewable-energy.pdf>.

2.2. Selection of sites for OREIs

Before the leasing process, selection of sites for OREIs takes place in two main stages; the first is strategic planning and selection at a national or strategic level of large areas of UK seabed which are suitable for developing OREIs. This is achieved via Strategic Environmental Assessment (SEA) conducted by the UK Government and Devolved Administrations of plans for additional offshore renewable energy capacity, and is supported by The Crown Estate's work to identify where such developments could take place. In advance of any leasing round activities for OREI development The Crown Estate uses a decision support system based on Geographical Information System (GIS), called MaRS (Marine Resource System) to identify the optimal areas for such developments, taking into account other users of the marine environment and interests or constraints in the marine environment. MaRS was developed to help The Crown Estate with the sustainable management of its marine estate; it provides users with access to hundreds of spatial datasets and enables analysis to identify areas of opportunity and potential constraint by taking account of technical opportunity as well as other external interests, sensitivities and users of the marine environment. During the strategic planning stage for development of OREIs consideration is also given to the Marine

Policy Statement (MPS) and any relevant Marine Plans which are in place (see section 5.3.1 for more detail).

The second stage in site selection takes place at a zone or project level, and is developer-led. In the case of developers that have been awarded an exclusivity agreement, such as with the Round 3 offshore wind zones, work takes place to identify which areas within that zone are most suitable for the development of a project(s). Alternatively, developers approaching The Crown Estate for an AfL during a leasing round have already begun to identify a site they would like to develop, and following the award of the AfL will commence project-specific work to define and assess the proposed OREI. During the early planning phases of either approach, consideration should be given to the MPS and relevant Marine Plans; it is also recommended that as best practice developers consult the fishing industry and resources such as MaRS to help start identifying any overlap and/or potential conflict with fishing activity.

More information on how the Round 3 offshore wind sites were selected at national and project levels can be found at:

<http://www.thecrownestate.co.uk/media/310531/round-3-offshore-wind-site-selection-at-national-and-project-levels.pdf>

The current Offshore Energy SEA (OESEA2) covering future leasing of offshore wind, wave and tidal energy (excluding Scottish Territorial Waters and Northern Ireland waters to 12nm) can be found at:

<https://www.gov.uk/government/consultations/uk-offshore-energy-strategic-environmental-assessment-2-oesea2>

In 2007, the Scottish Government published its SEA for wave and tidal energy; more information can be found at:

<http://www.scotland.gov.uk/Topics/marine/marineenergy/wave>

More information on Marine Scotland's planning process can be found at

<http://www.scotland.gov.uk/Topics/marine/seamanagement>

The Department of Trade, Enterprise and Investment commissioned an SEA on their plan for future development of offshore wind and marine renewable energy in Northern Ireland, which informed the development of their Offshore Renewable Energy Strategic Action Plan (ORESAP). This can be found at:

http://www.detini.gov.uk/ni_offshore_renewable_energy_strategic_action_plan_2012-2020_march_2012_.pdf

RenewableUK publish an offshore wind project timeline, which as well as identifying the developers of each site/zone, gives a useful indication of the anticipated timescales for pre-application through to consent, construction and operation. The Offshore Wind Projects Timeline 2013 is available at:

<http://www.renewableuk.com/en/publications/index.cfm/offshore-wind-Project-timelines-2013>

3. THE UK OFFSHORE RENEWABLES CONSENTING PROCESS

Any Exclusivity Agreement or Agreement for Lease awarded to developers by The Crown Estate (referred to in section 2) only gives developers the right to explore areas of the seabed for potential development opportunities. To take any development opportunities forward to a full construction proposal, developers would normally be required to undertake an Environmental Impact Assessment (EIA) and apply for the appropriate planning consents. Only after the necessary consents are granted will The Crown Estate enter into a lease for a site, allowing the developer to commence construction.

There are differences in the planning consents required depending on the size of the project and its geographical location. The key offshore consents required are summarised in the table below:

OREI CONSENTING REQUIREMENTS FOR PROJECTS IN ENGLISH, WELSH, SCOTTISH AND NORTHERN IRISH TERRITORIAL WATERS AND THE RENEWABLE ENERGY ZONE (REZ)

Consent	England	Scotland	Wales	Northern Ireland
Projects < 100MW				
Marine Licence¹	✓ MMO	✓ Marine Scotland	✓ Natural Resources Wales	✓ DoENI
Section 36 Consent (for projects >1MW)²	✓ MMO	✓ Marine Scotland	✓ MMO	✗
Article 39 Consent³	✗	✗	✗	✓ DETI
Development Consent Order⁴	✗	✗	✗	✗
Projects ≥ 100MW				
Marine Licence⁵	✓ MMO/Planning Inspectorate	✓ Marine Scotland	✓ Natural Resources Wales	✓ DoENI
Section 36 Consent⁶	✗	✓ Marine Scotland	✗	✗
Article 39 Consent	✗	✗	✗	✓ DETI
Development Consent Order	✓ Planning Inspectorate	✗	✓ Planning Inspectorate	✗

¹ Marine Licences are required under the Marine and Coastal Access Act 2009, the Marine (Scotland) Act 2010 and the Marine Act (Northern Ireland) 2013.

² Section 36 consents are required under the Electricity Act 1989 for projects over 1MW capacity. Beyond 12nm in Scottish waters, a Section 36 consent is only required for projects which are greater than 50MW.

³ Article 39 of The Electricity (Northern Ireland) Order 1992.

⁴ Development Consent Orders were introduced in the Planning Act 2008 to replace Section 36 consents for major infrastructure projects, which includes offshore generating stations over 100MW.

⁵ In England, for projects 100MW or above, the Marine Licence is 'deemed' within the Development Consent Order.

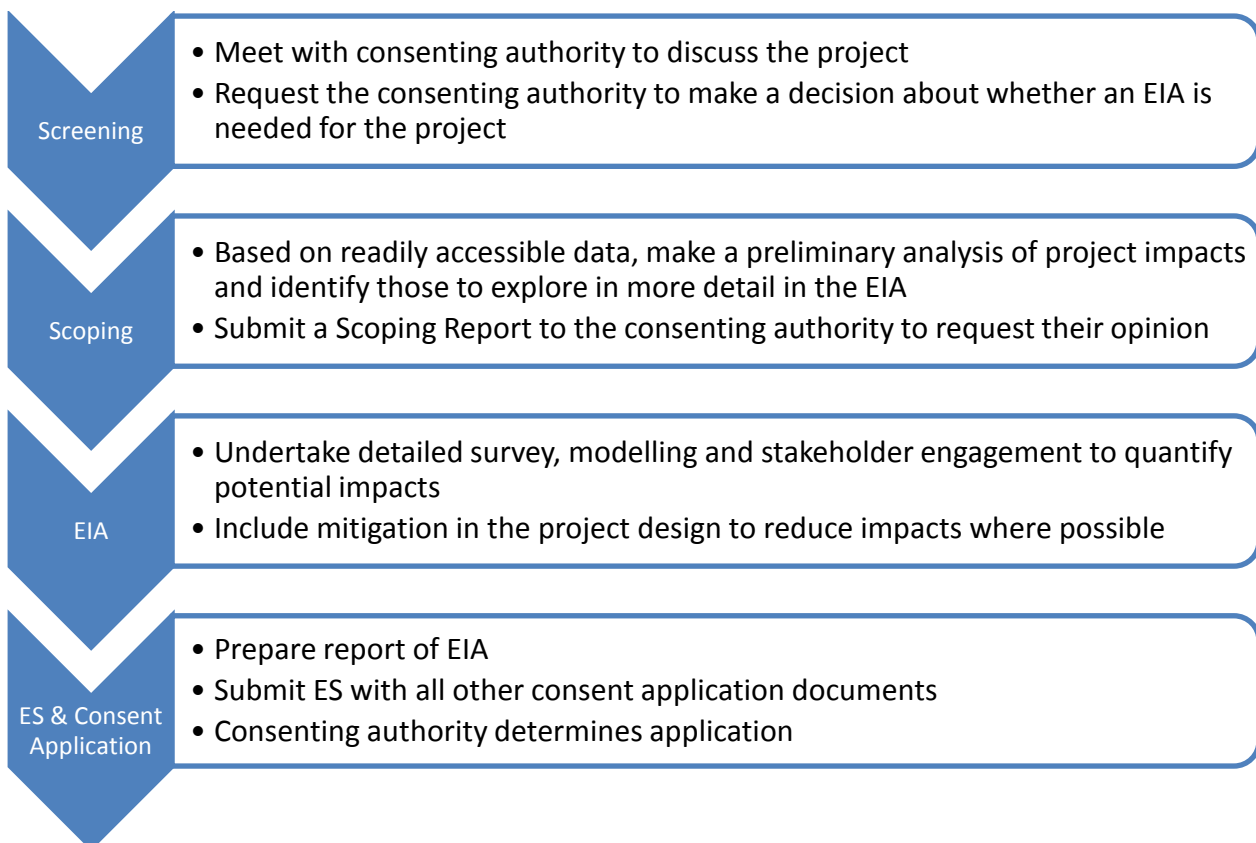
⁶ For projects 100MW or above, the Development Consent Order replaces the requirement for a Section 36 consent.

In addition to the consents outlined in the table above, separate planning consents may be required for any associated onshore works.

3.1. Environmental impact assessment

Whilst a developer often needs to apply for several different consents for a project, depending on the project size and location, there will be similarities in the process undertaken by all developers. Applications for a Section 36 consent under the Electricity Act 1989 or for development consent under the Planning Act 2008 are subject to EIA legislation. Similarly, Marine Licence applications and applications made under Article 9 of The Electricity (Northern Ireland) Order 1992 are subject to EIA legislation. Whether or not the developer must undertake an EIA and submit an Environmental Statement (ES) which reports the outcomes of the assessment is dependent on upon whether the scheme is contained within Annex I (for which an EIA is mandatory) or Annex II (judged on a case by case basis) of the legislation. An applicant has the option to request a formal 'screening' decision from the consenting authority to determine whether an EIA is required for a project. An EIA must assess the potential impacts of a project on the environment – this means both the natural environment (for example, impacts on sediments, birds, fish and marine mammals) and the human environment (for example, impacts on fishing activity, commercial navigation and aviation).

The main stages in EIA which a developer must undertake are summarised in the simplified diagram below. Prior to the consent application there are a number of opportunities for stakeholders to be consulted as part of the iterative EIA and project design process. The diagram below is just an overview of the main stages and processes involved; the timings of these stages will vary from project to project, and more details on the different consenting and licensing processes and where stakeholders will have opportunities to get involved are given in the following section.

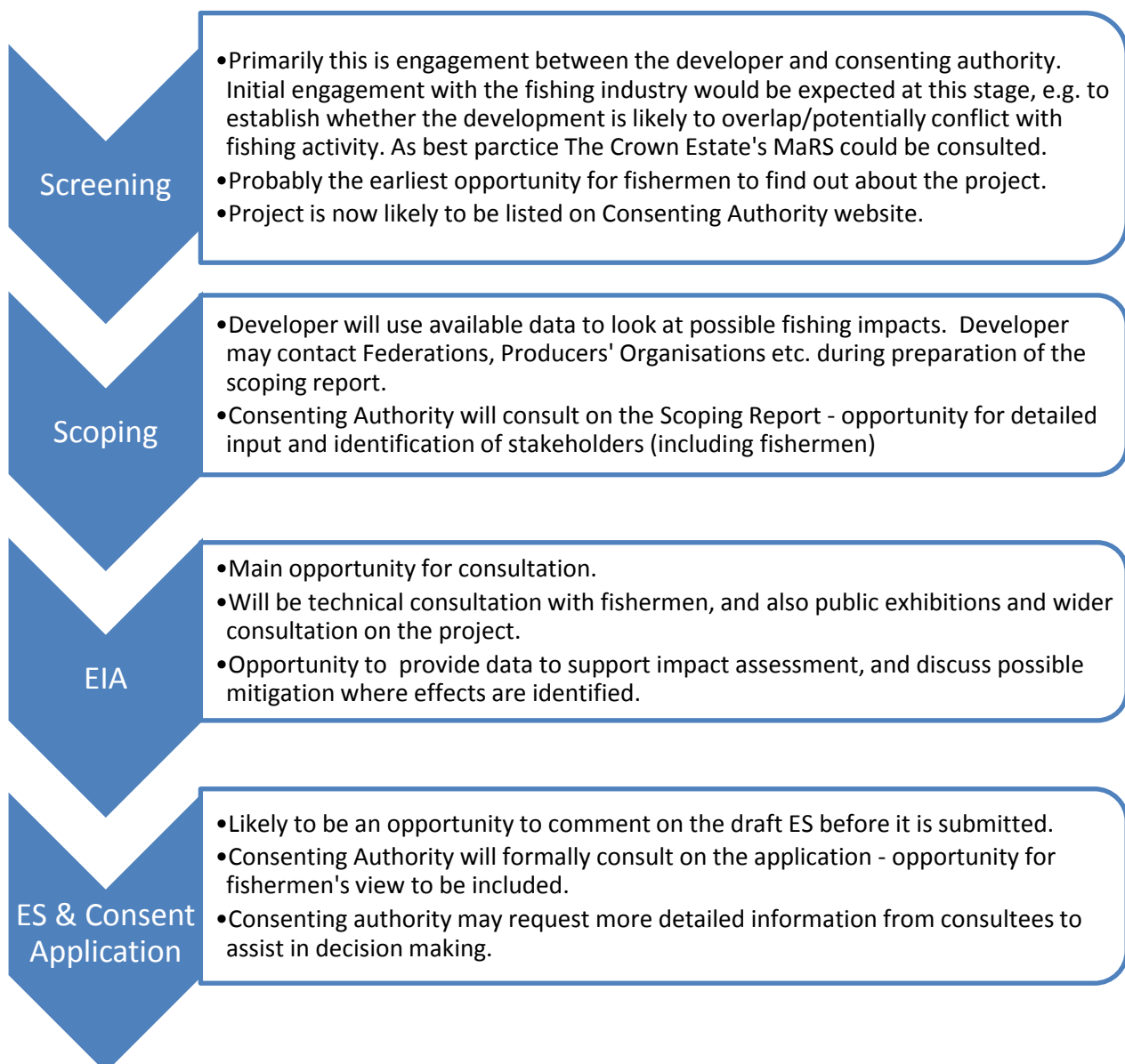


3.2. Liaison with the fishing industry during EIA

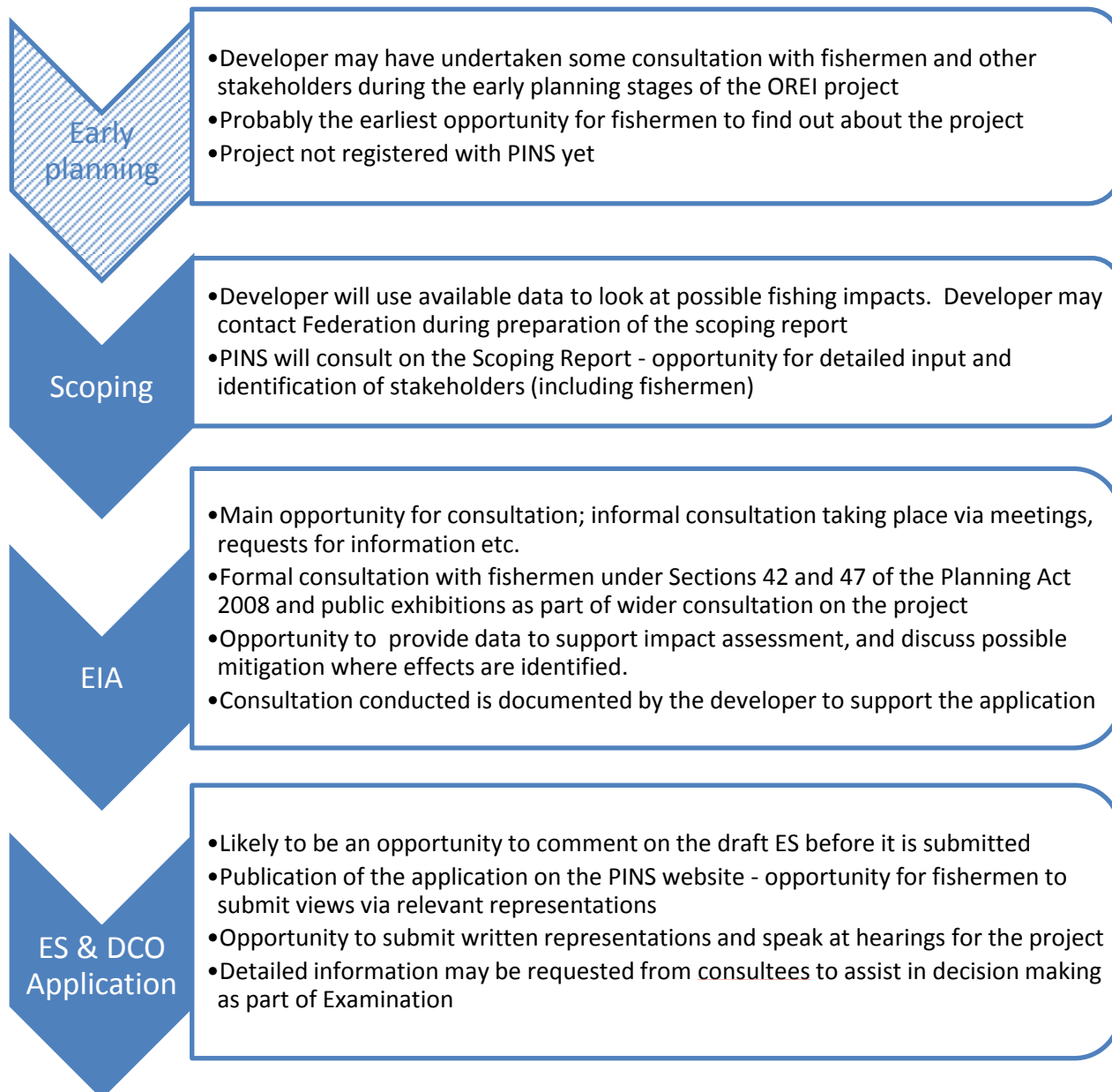
Throughout the process of EIA and consent application, there are opportunities for fishermen to be consulted and for their views to be taken into account. Constructive engagement between renewables developers and fishermen during the EIA process will be a more effective way of influencing the project proposals than representations from fishermen about the application once it has been submitted.

Developers must consult with stakeholders, including the fishing industry as part of the EIA process; the consenting authorities must also undertake a process of formal consultation which provides fisheries stakeholders to submit their views on the OREI. The key points for engagement between fishermen and OREI developers are set against the EIA flow chart in the figures and described below.

For Scotland, Northern Ireland and Section 36/Marine Licences in England and Wales:



For applications to PINS in England and Wales:



3.2.1 Applications to Marine Scotland

Scottish Ministers are the consenting and licensing authorities for inshore and offshore Scottish waters and the Marine Scotland Licence Operations Team (MS-LOT) issue Section 36 consents and Marine Licences on their behalf. MS-LOT will provide OREI developers with a screening opinion if requested, and will provide a scoping opinion on what the EIA should cover. MS-LOT can also act as a co-ordinator to facilitate consultation with statutory consultees and other key stakeholders during the pre-application process. At the time of application, MS-LOT will lead the consultation process, managing the responses from primary advisors and consultees and ensuring that concerns of stakeholders are adequately addressed by the applicant; once a decision has been made, MS-LOT make a recommendation to the Scottish Ministers, who make the decision whether or not to grant the consent and/or licence.

In addition to the formal consenting and licensing process outlined above, Marine Scotland have established a series of trilateral meetings involving the fishing and offshore renewable energy industries and as part of this have developed a communications strategy to promote an inclusive approach with regard to wind, wave and tidal stream development to ensure that the fisheries stakeholders are aware of the ongoing planning and licensing processes for OREI projects. This strategy builds upon the existing procedures for marine planning and licensing consultation, providing further opportunities for fisheries stakeholders to be aware of and feed into more strategic work on OREI projects and sectoral plans.

Further information can be found in A Guide to Marine Licensing:

<http://scotland.gov.uk/Topics/marine/Licensing/marine/general>

3.2.2 Applications to the MMO

The MMO issues Section 36 consents (for projects 1-100MW) and Marine Licences for OREIs in English inshore and offshore waters. As with MS-LOT, the MMO will provide developers with a screening opinion if requested. The MMO will consult as it sees appropriate at the scoping stage, and will use the advice of its primary advisors and consultees to inform a scoping opinion on what the EIA should cover. At the time of application, the MMO will consult any person or body as it sees fit in on any matter in which that person or body has particular interest or expertise. The MMO will lead the consultation process, managing the responses from primary advisors and consultees and ensuring that concerns are adequately addressed by the applicant. Once the period for the application process has closed, the MMO will notify the applicant of the decision.

Further information can be found in the MMO's Marine licensing guidance 1: overview and process:

<http://www.marinemanagement.org.uk/licensing/documents/guidance/01.pdf>

3.2.3 Applications to the Planning Inspectorate

For OREI developments >100MW in England and Wales (i.e. offshore wind farms), applications for a Development Consent Order (DCO) are made to the Planning Inspectorate (PINS) under the Planning Act 2008. Developments consented under this process are considered Nationally Significant Infrastructure Projects (NSIPs) and so an EIA is mandatory; the developer does not therefore need to request a screening opinion from PINS. Instead, the developer will inform PINS that they intend to make an application, and will submit a Scoping Report; PINS will consult a number of prescribed consultees on this report to help inform their Scoping Opinion which contains advice to the developer as to what issues need to be taken into account in the EIA. It should be noted that fishermen will not be automatically consulted at this stage.

The consenting regime under the Planning Act places significant emphasis on pre-application consultation. During the pre-application phase informal consultation with stakeholders will take place as part of the EIA process through meetings, requests for information etc. but a formal consultation stage (or stages) will also take place. Under the Planning Act, developers are required to formally consult 'Section 42' consultees (statutory bodies and other core consultees) and 'Section 47' consultees (local authorities and communities) on Preliminary Environmental Information (a precursor to their ES) and demonstrate as part of their application that adequate consultation has taken place and that the views of stakeholders have been taken into account. The DCO also contains a 'deemed' Marine Licence for licensable activities and infrastructure in English waters; the MMO will co-ordinate and lead work with the OREI developer on the

Draft Deemed Marine Licence that will form part of the DCO application, consulting its primary advisors and consultees through this process.

Once an application has been submitted, core consultees and members of the public have the opportunity to submit representations on the key issues or any concerns with the OREI project. These issues are then examined during the subsequent Examination, during which stakeholders have further opportunities to make written representations or speak at hearings. At the end of this period, PINS makes a set of recommendations to the Secretary of State (SoS) for Energy and Climate Change as to whether consent the project or not; the SoS will decide whether to issue the DCO and deemed Marine Licence with any relevant requirements/conditions attached to it. Post-consent, the MMO are responsible for enforcing the deemed Marine Licence.

An overview of the process and further information on how stakeholders can get involved in the process can be found in the PINS Advice Note 8 Series – How to get involved in the planning process:

<http://infrastructure.planningportal.gov.uk/application-process/participating-in-the-process/>

3.2.4 Applications in Wales

On April 1 2013, the responsibility for marine licensing passed to Natural Resources Wales (NRW); the marine licensing application process and its different stages is very similar to those of the MMO and MS-LOT as described above. However, the MMO is responsible for issuing Section 36 consents in Welsh waters; the application process will follow the one implemented in English waters and the MMO will work closely with NRW to ensure that this process is co-ordinated and streamline with the necessary Welsh Marine Licence.

Welsh Marine Licences cannot be ‘deemed’ as part of a DCO covering any OREI development in Welsh waters, and so a separate Marine Licence will need to be applied for. Again, NRW and PINS (and where relevant the MMO) will work together to align and streamline the different consenting and licensing regimes.

Further information on marine licensing in Wales, and contact information, can be found at:

<http://naturalresourceswales.gov.uk/apply-buy-report/apply-buy-grid/marine-licensing/?lang=en>

3.1.5 Applications in Northern Ireland

The Department of the Environment Northern Ireland (DoENI) is responsible for marine licensing in Northern Ireland, and these are administered through its agency the Northern Ireland Environment Agency (NIEA). The process for applying for Marine Licence in Northern Ireland, and the different stages involved are very similar to those in Scotland, England and Wales, with NIEA providing formal EIA screening and scoping opinions and consulting as appropriate with its primary advisors and consultees through the pre-application and application stages. The Department of Enterprise, Trade and Investment (DETI) is responsible for consenting OREIs under Article 39 of The Electricity (Northern Ireland) Order 1992.

Marine licensing guidance from the DoENI can be found at:
http://www.doeni.gov.uk/niea/water-home/marine_licensing_ni-3/northern_ireland_marine_guidance_1.htm

3.3. Establishing contact with the fishing industry

It can be difficult for project developers to identify the fishermen with whom they need to engage during the EIA process. A good starting point for the identification of relevant fishermen is for the developers to make port visits at the earliest opportunity to engage with fishermen on the quay and begin to establish the local relationships which will promote effective liaison. The Fishermen's Federations and regional groups may help with this process; developers could consult with the Fishermen's Federations and request information from them to help in more detailed consultation with affected fishermen but developers should be mindful not all fishermen are represented by the Fishermen's Federations so making local visits will play an important role in identifying relevant stakeholders to engage with.

The Fishermen's Federations are also likely to be consulted by consenting authorities at various stages in the development of the OREI project. Links to the overarching Fishermen's Federations' and Fish Producers' Organisations websites are provided below, but a more comprehensive list of key fisheries stakeholder contacts is contained in Appendix 3:

- For England, Wales and Northern Ireland, the National Federation of Fishermen's Organisations (NFFO): <http://www.nffo.org.uk/>
- For Northern Ireland, the Northern Ireland Fish Producers' Organisation (NIFPO): <http://osuk.org/nifpo.htm>
and the Anglo Northern Irish Fish Producers' Organisation (ANIFPO): <http://anifpo.com/>
- For Scotland, the Scottish Fishermen's Federation (SFF): <http://www.sff.co.uk/>
- For Wales, the Welsh Fishermen's Association (WFA): <http://welshfishermensassociation.wordpress.com/>
- For the Isle of Man, the Isle of Man Fishermen's Association or the Manx Fish Producers' Organisation, both contacted via: iomfishermen@manx.net
- The Shellfish Association of Great Britain (SAGB): <http://www.shellfish.org.uk/>

It should be noted that in Scotland, Inshore Fisheries Groups (IFGs) will also be key contact points for local associations within 6nm of the coastline who may be affected by the development, and so should be contacted by developers as part of the engagement and liaison process. Further information and links to the regional IFGs can be found at:

<http://ifgs.org.uk/>

4. MANAGING CONTACT

The overall objective is for developers to use best endeavours to progress their projects with as little disturbance as possible to fishing activities, whilst keeping fishermen as informed as possible. In turn, the fishing community should provide accurate information to developers on the nature of fishing activity operating in the area. To this effect, the Company Fishing Liaison Officer and the Fishing Industry Representative are key roles that can be appointed to ensure that the flow of information and discussion between developers and the fishing industries is maintained. A number of important steps for dissemination of information and updates should be followed, as best practice.

As part of their engagement with the fishing industry, developers should establish a fishing liaison plan, which sets out who the Company Fishing Liaison Officer (CFLO) and the Fishing Industry Representative (FIR) are, their respective responsibilities and how they will operate. It is recommended that a Fisheries Liaison Plan is developed and updated through the project planning and development process, and once a working relationship has been established with the fishing industry this should continue beyond construction to the operational phase. This Plan could also help to form an audit trail, documenting that communication and liaison between the industries has taken place.

4.1. Company Fishing Liaison Officer

Every developer should have at least one individual nominated as the developer's fishing/fisheries contact, known as the CFLO; this person should be employed directly by the developer or, if employed as a consultant to the developer, should have delegated authority to fully represent the developer on fishing issues with the support of the FIR (see below). Whilst the CFLO may delegate much of the day-to-day liaison between the fishing industry and the developer to the FIR, they are likely to be the primary point of contact for the fishing industry when direct communication with the developer is required and their identity should be made available to the fishing community.

During the construction phase, the CFLO can ensure the timely provision of information regarding programmed vessel movements or delays. In addition, this communication channel also facilitates dissemination of information, for example urgent bulletins in the event of any marine hazards (e.g. loss of plant onto the seabed) (See Section 4.3 on information dissemination).

Consideration should be given to having a 24-hour contact number for the CFLO, as in the cables sector; this number does not change and there may be different contacts at the end of the phone depending on whether it is day or night, or the length/phase of the development (e.g. from the pre-planning stage to the operational stage), or if the development is sold to another operator. Alternatively, it may be considered more appropriate for the FIR to act as the main 24-hour point of contact for the fishing industry to get in touch with (see below); the requirements for such arrangements, and how they are set up, will vary on a project-by-project basis.

4.1.1 CFLO duties

It will be the responsibility of the CFLO to liaise with and between the fishermen and the developer, with the support from the FIR. To ensure that the CFLO is able to carry out these duties they should:

- Establish a strong positive working relationship with the fishing industry;
- Have a detailed understanding and awareness of the fishing industry (this can develop over time);
- Have a good understanding of the potential impacts on fishing of the OREI; and
- Be able to communicate with the fishing industry, government departments, and other developers.

To achieve these, the CFLO may:

- Prepare and maintain a project specific register of local fishermen's groups and associations;
- Engage in consultation with the fishing community to understand any concerns with the proposed OREI and associated survey and construction activities; and
- Arrange or attend as necessary, meetings for fishermen in order to:
 - Promulgate information on the project design envelope and the construction programme, and provide updates on any changes to the project throughout the planning phase;
 - Gather fishermen's views on effects of projects on their working practices;
 - Work with fishermen to resolve any issues or conflicts arising where practicable; and
 - Continue dialogue throughout the project planning stage and actual construction and operation.

This list is not intended to be exhaustive and developers are encouraged to tailor this to their individual site(s). It should be noted that many of these duties may also be undertaken by the FIR; small developers may not have a dedicated CFLO and may need to employ a third party to carry out the CFLO functions.

4.1.2 Information needed by CFLOs

In order to be able to carry out his or her duties, the CFLO could be informed on a timely basis of the following:

- All works and proposed works that may impede fishing/fisheries activities; this is likely to include, but not be limited to:
- Pre-development surveys, including geophysical and geotechnical surveys;
 - Changes to traffic routes, restrictions to vessel movements;
 - Changes or additions to navigation aids;
 - Prohibited/restricted areas and/or exclusion/safety zones;
 - Home port(s) and routes of vessels to and from development installation sites; and
 - Installation activities, submarine cable routes and cable laying, and the anchor patterns of installation vessels, etc.
- The planned schedule for these works; and
- Details of vessels involved (call signs, Inmarsat numbers, communications links etc.), their planned routes, work times and movements to and from the installation sites.

4.2. Fishing Industry Representatives

As a counterpart to the CFLO, experience has proven that it is enormously helpful for the OREI developer when they are able to have a single onshore contact point within the fishing community who can be trusted to represent an un-biased fishing industry view of the region within which the OREI is located.

That person, termed a FIR, need not be an active fishing vessel owner/ operator, but most importantly should be trusted by those in the fishing industry whose views he will be expected to represent to the CFLO and therefore the OREI developer. Problems have been created in the past where the FIR has been unacceptable to the affected fishermen because there is little local knowledge of or trust in that person. It is therefore essential that there is industry 'buy-in' to the appointment of the FIR; in the past other sectors such as the subsea cable industry have used someone local who knows the area and that local fishermen trust. Consideration should therefore be given to appointing someone local; appointment of the FIR can be guided by the advice of the local fishermen, regional Fish Producers' Organisations or the Fishermen's Federations but ultimately it is the developer's decision who to appoint.

It should be recognised that due to the diversity and geographical range of the fishing industry more than one FIR may need to be retained, perhaps to cover onshore and offshore roles. Similarly it should be recognised that by the nature of the diversity within the fishing industry it may be impossible to reach every fisherman but this should be the objective of the FIR(s).

In addition to retaining the services of an Onshore FIR, developers may also wish to contract the services of one or more Offshore FIRs who will be present onboard survey or construction vessels and thus able to provide advice to, and liaise with, fishermen that are active offshore within the vicinity of an ongoing survey of construction programme.

4.2.1 FIR duties

The FIR must be able to demonstrate to the CFLO that they have the knowledge and support of the fishing community, by way of informing them of the local industry and the impacts of the OREI development on it. This local knowledge is recognised as important to developing an inter-industry understanding and co-operation in forming working groups to seek ways to ensure co-existence is a reality.

The FIR must also be able and willing to disseminate information from the developer to the fishing community and vice versa, in a timely and all-inclusive manner. The importance of this aspect cannot be ignored. It is essential that the CFLO cascades information in sufficient time to the FIR for him to disseminate to the local fishermen; it is also essential that the FIR passes accurate information in sufficient time to the CFLO, such that the CFLO can disseminate this information amongst the relevant departments within the developer's organisational structure.

The principal requirements of the FIR should include, but not be limited to:

- Forming the principal link between the fishing community and the OREI developer who can reliably transmit fishing industry views;

- Providing the operator with guidance on fishing activity in the area and draw attention to particular fishing sensitivities;
- Liaising with fishing skippers with the objective of relaying accurately their concerns regarding site sensitivities and any other issues back to the CFLO, in order to inform the EIA process, as well as ongoing survey and/or work programmes;
- Disseminating updated project information to fishermen and communicating any changes that occur;
- Promoting methods of work which minimise disturbance to fishing;
- Monitoring fishing activities in the development area;
- Advising fishing vessels of works activities and engaging with vessels who do not adhere to safe working practices; and
- Having a role to play in negotiations on mitigating the effects of construction, operation and decommissioning which may where all else fails lead to the need for financial arrangements, such as compensation for temporary movement of static gear. This will need to happen according to recognised standards across the whole territorial waters. Therefore the FIR should always act professionally and not make any disclosures or commitments on these subjects without the authority of the developer;

Fishing is a 24-hour operation therefore ideally the FIR will be contactable 24 hours a day as fishermen could need to make contact with the FIR and the OREI developer at any time. If the responsibility of FIR is shared between individuals then ensuring that a contact is always available is much easier to achieve; similar arrangements for a single 24-hour telephone number as suggested for the CFLO could be made to ensure that a responsible person will at all times be available at the end of a phone.

4.3. Fishing industry responsibilities

Although key liaison roles will have been appointed by the OREI developer, the fishing industry will also have a role to play in ensuring that effective liaison and interaction takes place in a timely and constructive manner. Fishermen should be willing to liaise and discuss their concerns with the FIR and CFLO in an open and transparent way; if an FIR has not been appointed for the OREI project, then they should have a clear representative who is able to speak for the industry, especially in those areas where national associations or Fishermen's Federations are not active. Factual and accurate data should be submitted in order to be able to allow the level of activity in the area to be quantified and so inform the assessment of potential impacts as part of the EIA process, and to substantiate any claims where relevant. The fishing industry should work with OREI developers towards resolving any issues or conflicts arising where practicable.

4.4. UK fishing industry contacts

The developer should make contact with the relevant national and regional fishing industry bodies at the earliest opportunity in order to ensure that lines of communication are established at an early stage in the project development. Developers should ensure that this contact is continued throughout the pre-construction, construction and operation and maintenance phases, and that all the key fisheries stakeholders are included in liaison and consultation (see Section 3.2). This is likely to include, but will not be limited to, the national Fishermen's Federations, regional Fish Producers' Organisations (FPOs), Fishermen's Associations, Inshore Fisheries Groups and other relevant organisations such as the Shellfish Association of Great Britain. The organisations will in turn be able to advise of any other regional and local

groups or individuals who the developer should make contact with. Some key points of contact are provided in Appendix 3.

4.5. International fishing industry contacts

Where it is established that a development may impinge on grounds fished by vessels from other nations, it is recommended that contact is made with the relevant Regional Advisory Council (RAC). RACs draw together different European Member States and prepare and provide advice on the management of fisheries in their region on behalf of their members; these include fisheries organisations and other stakeholders including environmental organisations. Links to the websites of the RACs of relevance to UK waters are provided below, but a more comprehensive list of contact details for the secretariats of the RACs is contained in Appendix 3:

- The North Sea Regional Advisory Council: <http://nsrac.org/>
- The North Western Waters Regional Advisory Council: <http://www.nwwrac.org/>
- The Pelagic Regional Advisory Council: <http://www.pelagic-rac.org/>

4.6. Information dissemination

Information dissemination is central to avoiding problems in the offshore renewable energy sector, particularly the fouling of gear and delays to construction activities. Timely communication through recognised communication channels is needed, providing information on the position of offshore fishing activities, the OREI site, infrastructure positions, safety zones, submarine cable routes, and vessel movements associated with the development.

Timely communication and information dissemination is important in avoiding problems in the offshore renewable energy industry, particularly the fouling of gear, and FLOWW therefore suggests that the use of communication channels such as the Kingfisher Division of Seafish and their Kingfisher Fortnightly Bulletin and the KIS-ORCA project (www.kis-orca.eu) to promulgate this information. Such information tools are already used by the offshore oil and gas and cable industries; the Kingfisher Bulletins and charts are widely used by fishermen and are an important information dissemination tool besides notices and bulletins issued by the Maritime and Coastguard Agency (MCA) and UK Hydrographic Office (UKHO). The Kingfisher Division of Seafish and their overview, which contains links to the Kingfisher Bulletins (including for OREIs) and Cable Awareness Chart series, can be found at: <http://www.seafish.org/fishermen/kingfisher>

During the development of an OREI, the following information should be sent to the Kingfisher Division of Seafish (kingfisher@seafish.co.uk):

- Positional information for the proposed site once it becomes available, i.e. its area, and positions of infrastructure, and safety zones, submarine cable routes etc.;
- Clearly defined datum of all positional information on all associated documents;

- Route position lists for submarine cables, which should preferably be sent in Excel spread-sheet format, datum WGS84, although other formats will be accepted; and
- A list of contacts for the operators/contractors and associated timeframes.

Kingfisher can issue this proposed information and update it when the as built/as laid information is available. During both the development and construction stages of an OREI, information on vessel movements associated with the project and any other marine activities should be sent to Kingfisher for inclusion in the Kingfisher Bulletins. This may include the vessel name, call sign, anticipated duration in the field and contacts for personnel onboard connected to the project. The information should also be issued through other appropriate mediums such as Notices to Mariners (NTMs).

Information should also be communicated on a timely basis to the UKHO who will subsequently promulgate preliminary and permanent NtMs and/or navigational warnings for expected construction works and completed structures/sites. The information required by the UKHO is detailed in Appendix 5; the 'Final Information' communicated to the UKHO will enable the correction of hydrographic charts and publications by means of NtMs, and in due course, revised editions of paper charts through permanent chart corrections. Radio Navigational Warnings are also issued when appropriate, for which the MCA raises a charge.

The MCA may issue separate guidance to all shipping in the vicinity of OREIs using the established M Notice procedures. UKHO will also liaise with the relevant local authorities for the broadcast of maritime safety information.

Key contacts for the MCA, UKHO and other bodies involved in information dissemination for OREIs can be found in Appendix 3

More information on the Maritime Safety Information managed and issued by the UKHO can be found at:
<http://www.ukho.gov.uk/ProductsandServices/MartimeSafety/Pages/Home.aspx>

MCA's Marine Guidance Notes for developers on navigation safety issues can be found at:
http://www.mcga.gov.uk/c4mca/mcga-safety_information/nav-com/offshore-renewable_energy_installations.htm .

5. LIAISON DURING THE PLANNING PHASE

It is recommended that contact between the developer and the local fishing industry is established from the earliest possible time in the planning phase, in order to be able to benefit from industry knowledge and feed this into site selection where possible and the assessment of potential impacts. This initial contact should be made in accordance with the procedures and key liaison roles described in Section 4. Liaison should be maintained throughout the planning phase in an iterative manner as the project envelope is developed and refined.

5.1 Establishing contact

Port visits are the best way of establishing local relationships, although contact may have been initiated via the national Fishermen's Federations and Inshore Fisheries Groups as described in Section 3.2; this early contact may assist developers to gain an insight into the fishing industry, and help to identify the local fishermen with whom they need to engage. Fishermen in turn need to be willing to communicate and provide factual information and accurate data to developers and engage in the spirit of co-operation.

Having early contact at the local level will assist developers in the requirement to engage an FIR to be the local focal point for contacting and liaising with the local fishing industry.

5.2 Introducing the project

OREI developers should at the earliest possible stage seek to:

- Discuss the development position, size (e.g. nautical miles), likely associated safety zone proposals and associated submarine cable routes and landing points with local fishermen, shell fisheries, and local sea fisheries committees;
- Provide information regarding the use of the zonal appraisal and design envelope approach (the 'Rochdale envelope') and scenario planning in the consenting process, and discuss with fishermen;
- Provide an indication of the design development process and how fishermen may input to this, e.g. on export cable routes, anticipated burial depths etc.; contingency planning for scenarios such as being unable to achieve these parameters and how to mitigate and minimise potential impacts should also be discussed;
- Ask for information on specific fishing activities in the area;
- Hold briefing sessions to advise fishing groups and other interested parties of key activities; it should be noted that more than one or two may be needed to achieve an appropriate level of involvement; and
- Consider additional briefing sessions as necessary through the life of the project;

Developers should also provide a development and cable awareness chart for distribution amongst local fishermen and posting up at local Harbour Master offices. During the planning stages an A4 chartlet of the area which will affect the local fishermen may be sufficient; this should include information on fishing

grounds and local shellfisheries. The Kingfisher Division of Seafish provides a service to produce fishing 'Awareness' charts if required.

Developers should consider inviting all fisheries-related organisations to meetings (not just fishermen), for instance harbourmasters, IFCAs, local MMO/Marine Scotland/DARDNI/Welsh Government fisheries officers or representatives to meetings. The FIR must help in the development of these meetings and help ensure appropriate attendance.

Developers should recognise that not all affected fishermen will be able to attend meetings and discussions on the OREI project; however, effort to communicate and disseminate information can be helpful, and the developer should be willing to travel to the fishermen to meet with them. Fishermen also have a responsibility to become involved in meetings/discussions when invited to, and should identify themselves and justify why they may be affected by the OREI proposals. As stated above, the onus is on the FIR to encourage attendance at such meetings, or to encourage participation by alternative methods; the developer should liaise with the FIR to decide the most appropriate time to hold meetings to ensure that fishermen are able to attend.

The key learning point for the offshore renewable energy industry is for developers to involve the fishing community in their project from its conception, and for the fishing community to constructively engage with the developer.

5.3 Environmental assessment and surveys

As described in Section 3, there are a number of stages during an OREI's development that represent opportunities for fishermen to be consulted and for their views to be taken into account. Liaison with the fishing industry throughout the development process will help ensure that the developer has taken adequate consideration of potential conflicts/constraints, and will help inform the optimal project siting and design.

5.3.1 Marine planning and Zone Appraisal and Planning

Marine planning is currently underway for UK waters, with the aim of optimising the spatial use of our marine environment and resources. The Marine Policy Statement (MPS), published in 2011, is the framework for developing Marine Plans and taking decisions affecting the marine environment and has been jointly adopted by the UK Government, Scottish Government, Welsh Government and Northern Ireland Executive. The MPS will facilitate and support the formulation of Marine Plans by each administration, and contains high-level objectives for balancing potentially competing interests such as offshore renewable energy targets and the importance of the fishing industry and its role in food security in the UK. The individual administrations are developing Marine Plans to deliver these high-level objectives, in keeping with their renewable energy and fisheries policies.

Consent decisions for OREIs will be made by the relevant consenting authority with consideration to the MPS and Marine Plans. Consequently, fisheries stakeholders will expect that a consideration of their sector is made at the early planning stages for OREI developments. In addition to producing national and regional Marine Plans, the Scottish Government has also produced non-statutory offshore renewable energy

sectoral plans, covering offshore wind, wave and tidal energy to support the achievement of their renewable energy and energy decarbonisation targets.

For the Round 3 offshore wind programme, The Crown Estate advocated a strategic zone-based approach to identifying potential impacts and planning offshore wind developments. This Zone Appraisal and Planning (ZAP) approach gave developers the opportunity to address as many of the environmental and planning constraints as possible at a zone level and to optimise technical opportunities as part of the process of site development within the zones, taking account of multiple receptors including fish resources and fisheries. Such an approach was intended to help establish more conducive relationships with the fishing industry and enable the collection of useful data sets when the planning moved on to the individual project stage. While it is recognised that wave and tidal stream developments will not have undertaken a ZAP, the principles of early engagement with fisheries stakeholders and strategic identification of sensitive receptors should still be adopted.

Further information on The Crown Estate ZAP process can be found at:

http://www.thecrownestate.co.uk/media/206119/r3_zone_appraisal_and_planning.pdf

More information on marine planning and fisheries management in England and Wales can be found in:

Managing our marine resources – the Marine Management Organisation:

<http://archive.defra.gov.uk/environment/marine/documents/legislation/mmo-brochure.pdf>

More information on marine planning and fisheries management in Scotland can be found at:

<http://www.scotland.gov.uk/Topics/marine>

5.3.2 Approach to EIA

Following on from the ZAP stage or any other strategic assessment, fisheries stakeholders should already have been engaged and this will assist with the conduct of project specific assessment work. As part of the EIA process developers are required to take into account the likely significant effects of a development on the environment; this includes direct and indirect, secondary, cumulative, short, medium and long-term, permanent and temporary, positive and negative effects.

Environmental assessments include a number of work areas where the fishing industry can contribute knowledge and inform methodology; they will also have a keen interest in the outputs of the assessments in terms of the project's relationship with their own fishing activities and with the fisheries resource upon which they depend. This input should be coordinated by the FIR, in conjunction with the appropriate fisheries consultant appointed to conduct the EIA work. Fishing vessels may be used for survey work; this is discussed in more detail in Section 8.

For the conduct of characterisation studies for commercial fisheries, fish ecology and benthic ecology, the following general principles should be noted:

- The fishing industry can provide a source of local knowledge as well as records on commercial catches covering seasonality, historical changes and benthic composition;

- Fisheries stakeholders will be particularly interested in potential impacts that effect their own fisheries but also in species at particular risk from OREIs such as elasmobranchs and where there are any spawning, nursery or feeding grounds or areas important to key life stages. Key seasons (such as over wintering grounds for crustaceans) and areas of known local abundance or migration routes in the vicinity of the proposed OREI are also important;
- Given the close relationship between survey techniques and the activities of the fishing industry, the fishing industry can form both a source of advice on approaches to apply, but also will be interested to see that those methods applied will be fit for purpose. Where appropriate, it may also be desirable for surveys to be based around commercial fishing strategies as this will provide data that is directly comparable with data from every day fishing practice;
- Where appropriate and feasible, survey strategies that make use of the local fishing fleet will help promote a shared understanding of the issues and buy-in from the fisheries stakeholders. There is an increasing interest in fisheries policy to enable fleets to evidence their own catches and this is a strategy which may usefully be employed, where there is the capacity to do so, to engaging a local fleet in active data collection through self-sampling approaches, e.g. for baseline and monitoring work.

Uncertainty in predicted impacts to fisheries resources identified through the EIA may be addressed for a consented OREI through the establishment of baselines and monitoring pre-, during and post-construction; any monitoring requirements will be agreed with the marine licensing authorities as part of the consenting process. The fishing industry is likely to have an interest that such strategies are fit for purpose, particularly where a predicted impact concerns commercial stocks, and so may usefully input to discussions on agreeing monitoring protocols with the marine licensing authorities.

Further information on data collection approaches for characterisation and baseline surveys can be found in:

Cefas (2012) *Guidelines for data acquisition to support marine environmental assessments of offshore renewable energy projects*:

<http://www.marinemangement.org.uk/licensing/groups/documents/orelg/e5403.pdf>

The UK Marine Monitoring and Assessment Strategy:

<http://webarchive.nationalarchives.gov.uk/20130123162956/http://www.defra.gov.uk/environment/marine/science/ukmmas/>

Guidance on Survey and Monitoring in Relation to Marine Renewables Deployments in Scotland:

<http://www.snh.gov.uk/planning-and-development/renewable-energy/offshore-renewables/marine/>

Decommissioning effects should also be considered as part of the EIA. The Department for Energy and Climate Change (DECC) is responsible for decommissioning of OREIs; further information can be found at:

<http://www.decc.gov.uk/assets/decc/what%20we%20do/uk%20energy%20supply/energy%20mix/renewable%20energy/policy/offshore/orei/file35754.pdf>

5.3.3 Navigation impact assessment

When conducting navigational impact assessments, good liaison with the fishing industry will assist in informing and verifying assessment outputs. This is usually undertaken through a dedicated Hazard Identification and Risk Assessment workshop or a similar forum. Key issues include the increased steaming

times to fishing grounds, and an increase in safety risk due to deviation such as “end-on” or “crossing” encounters and the creation of choke points.

Further information can be found at:

MCA Marine Guidance Note 371: Offshore Renewable Energy Installations (OREIs) – Guidance on UK Navigational Practice, Safety and Emergency Response Issues:

http://www.dft.gov.uk/mca/mgn_371.pdf

Methodology for Assessing the Marine Navigational Safety & Emergency Response Risks of Offshore Renewable Energy Installations (OREI):

http://www.dft.gov.uk/mca/nra_methodology_2013.pdf

5.3.4 Commercial fisheries studies

Good liaison is especially important if commercial fisheries studies conducted as part of an EIA are to promote shared understanding of the implications of an OREI project for the fishing industry affected. Principle considerations for a commercial fisheries assessment should be assessing the impacts of a proposed OREI on key species and associated fishing activities and therefore fishing communities. The fishing industry should have an interest in both the methods and data used to undertake such studies and assessments as well as the presentation of the outputs and linked recommendations and strategies for minimising, mitigating and managing potential impacts (see Section 7 on mitigation and co-existence planning). Key issues include taking into account the scope of potential impacts at the business, community and fishery supply chain levels, within the bounds of uncertainty that may exist.

Good practice through effective liaison will include working with those potentially affected and their representatives to:

- To input into a survey and assessment methodology which meets EIA requirements; in some cases offshore field survey may not be required due to sufficient data resources being available elsewhere;
- Contribute knowledge and opinion regarding potential impacts and displacement;
- Feed in fishing industry primary data where this may corroborate or supplement other sources of data;
- Agree protocols on the use and presentation of activity data, acknowledging the need to maintain commercial confidentiality;
- Validate the data procured and its subsequent application;
- Seek agreement over conclusions which then feed into exploring mutually supported mitigation and coexistence options.

Seafish’s *Best Practice Guidance for Fishing Industry Financial and Economic Impact Assessments* provides methods for calculating financial impacts as a result of areas closed or restricted for fishing:

<http://www.seafish.org/media/634910/ukfen%20ia%20best%20practice%20guidance.pdf>

5.3.5 Cumulative impact assessment

Cumulative impact assessment needs to identify, describe and evaluate the cumulative effects that are likely to result from different elements of an OREI project acting cumulatively on a receptor, and/or in combination with other projects and activities that have been or will be carried out in the foreseeable future. To carry out an assessment of cumulative effects, developers would normally be required to consider other existing completed or approved but not yet completed projects, and ongoing activities that could also be affecting fisheries receptors. Consideration should also be given to any plans or projects for which an application has been made and are under consideration by the consenting authorities, and any reasonably foreseeable future projects and plans.

In assessing potential cumulative effects, fisheries stakeholders should be able to advise on other projects, activities and plans that should reasonably be taken into account. Engagement and discussion should form an integral part of the liaison throughout the EIA process.

6. LIAISON DURING THE CONSTRUCTION AND OPERATIONAL PHASES

The developer is responsible for ensuring that effective communication and dissemination of information takes place, and has an obligation to place the same levels of responsibility on their contractors. Fishermen in turn need to be willing to communicate and engage in a timely manner in the spirit of co-operation. The fishing liaison plan should be updated during the planning and construction phases of a development and then again during operation, and issued to the contractors. Commercial fishing liaison should be documented in the Project Execution Plan (and Handover plans where relevant); safety plans and navigation plans that are also produced for the development should all correspond to this.

6.1. Information for construction and maintenance personnel

The following section is intended for all personnel undertaking installation and maintenance operations; it may contain a certain amount of repetition with other parts of this guidance because it is designed to be read by contractors, working for short periods on OREI projects, who may not have the time to read this entire document.

Contractors, developers and fishermen must all be aware that safety of navigation is paramount during pre-installation activities, the construction process and operation. Appropriate navigational aids must be used. In addition:

- In the interest of fostering a working relationship that is based on mutual trust, good communication is key. This includes disseminating information to all parties as early as possible and ensuring that effective lines of communication are maintained;
- Vessels should strictly observe the relevant requirements of The International Regulations for Preventing Collisions at Sea 1972 (COLREGs). In accordance with this, relevant lights and shapes should be displayed at all times and appropriate sound signals used as required;
- Radio warnings are to be regularly transmitted and when vessels are operating in controlled areas the Vessel Traffic Service (VTS) is to be apprised of the operation as required;
- In areas where fixed gear fishing is conducted, vessels associated with OREI development should ensure they remain within their designated work area; in turn, fishermen should avoid locating gear in areas where surveys are due to take place, and should not purposefully obstruct any construction related activities; and
- A dedicated International Maritime Mobile VHF working channel is recommended for the exchange of relevant information between contractors afloat and other vessels in the area.

6.2. Project updates

Prior to commencing work, the CFLO and FIR should also have established contact with any fisheries stakeholders and fishing activities in the area, and it will be their responsibility to provide regular updates to these fishermen and relevant organisations listed in Appendix 3. In some cases, the implementation of a fisheries working group specific to an OREI project or a region could be considered, to disseminate information and discuss the construction and maintenance programmes. Section 4.4 provides more details

on information dissemination and project updates, and Appendix 4a and 4b provides details regarding UKHO and Kingfisher Division of Seafish notification requirements.

A Notice to Mariners (NTM) should be issued an adequate period prior to any construction or maintenance activity; if for some reason reasonable NtM timescales are not possible then information on the planned activity should be disseminated to local fishermen via the FIR. RenewableUK have produced guidance on NtMs for offshore wind and wave and tidal projects:

<http://www.renewableuk.com/en/utilities/document-summary.cfm?docid=E5011BB2-ACA3-4812-82D7EBFA3CCF1914>

The MCA must be contacted, and the local and/or national system for the issue of navigational warnings should also be considered for the broadcast of any safety messages. A charge is levied by the MCA for this service. Updates should be issued daily during periods of heavy activity and weekly at all other times and should include details on the vessel, location of works and the expected time of those works.

In addition, Sécurité transmissions can be made from VHF channel 16 for general coverage. Local fishermen will use, and will be able to provide details on, working channels.

6.3. Direct contacts

Details of proposed operations should be advised to the local Coastguard, UKHO, and any relevant national fisheries organisation(s). Details must also be advised to MCA Headquarters (Navigation Safety Branch), in addition to the local HM Coastguard Office. The UKHO would like at best two months and at least one month of notice of any proposed operations (see Appendix 4a for details).

FLOWW stresses that the timing of contact is crucial; these contacts should have been contacted prior to construction and so good working relationships should be in place. Key contacts are provided in Appendix 3.

6.4. Other contacts

In addition, the local fishing organisations and Harbour Masters will pass on information to local fishermen and hence need to be informed on a regular basis; individual fishermen should also assist by passing on information to each other. Developers will need to monitor this process, possibly through regional groupings, and local MMO/Marine Scotland/DARDNI/Welsh Government fisheries officers should also have a role in ensuring this information flows smoothly. FLOWW has provided the names of some of the principal national bodies in Appendix 3; it will be the responsibility of individual developers to compile and maintain a list of key local contacts.

7. MITIGATION AND CO-EXISTENCE PLANNING

Opportunities for achieving co-existence between an OREI and fishing activity can be maximised and are more likely to be realised through their systematic and timely consideration in the project planning process, supported by engagement with the fishing industry to reach mutually agreed options. A clear process throughout project design, the identification of potential impacts and mitigation strategies and the management of residual impacts should be followed; the underlying aim should be to allow fishing to continue wherever possible.

There is no one-size-fits-all approach to achieving co-existence between OREIs and fishing industries, and so opportunities for co-existence will have to be identified and explored on a case by case basis. Where co-existence is not possible and/or there are significant residual impacts, mitigation measures may be required and where feasible these should be developed in collaboration with the affected fisheries stakeholders.

Good practice through pre-application stages should form the foundation upon which any mitigation schemes are considered. Liaison will be a critical part at this stage of the process in order to explore the options that can be mutually agreed prior to any project consent being given.

When co-existence between OREI project and the fishing industry is achieved there will be less of an emphasis on the need to address residual impacts through mitigation measures, although it may be unlikely that all impacts can be avoided. Although it may not be possible to cover all elements in detail at the project application stage, it is essential for both industries to provide sufficient detail in order to enable all parties to have clarity and assurance over the process by which impacts will be addressed post-consent. Given that there may be some uncertainty over potential impacts to the fisheries resource, forming an agreement over approaches to establishing baselines and monitoring arrangements post-consent will also be essential.

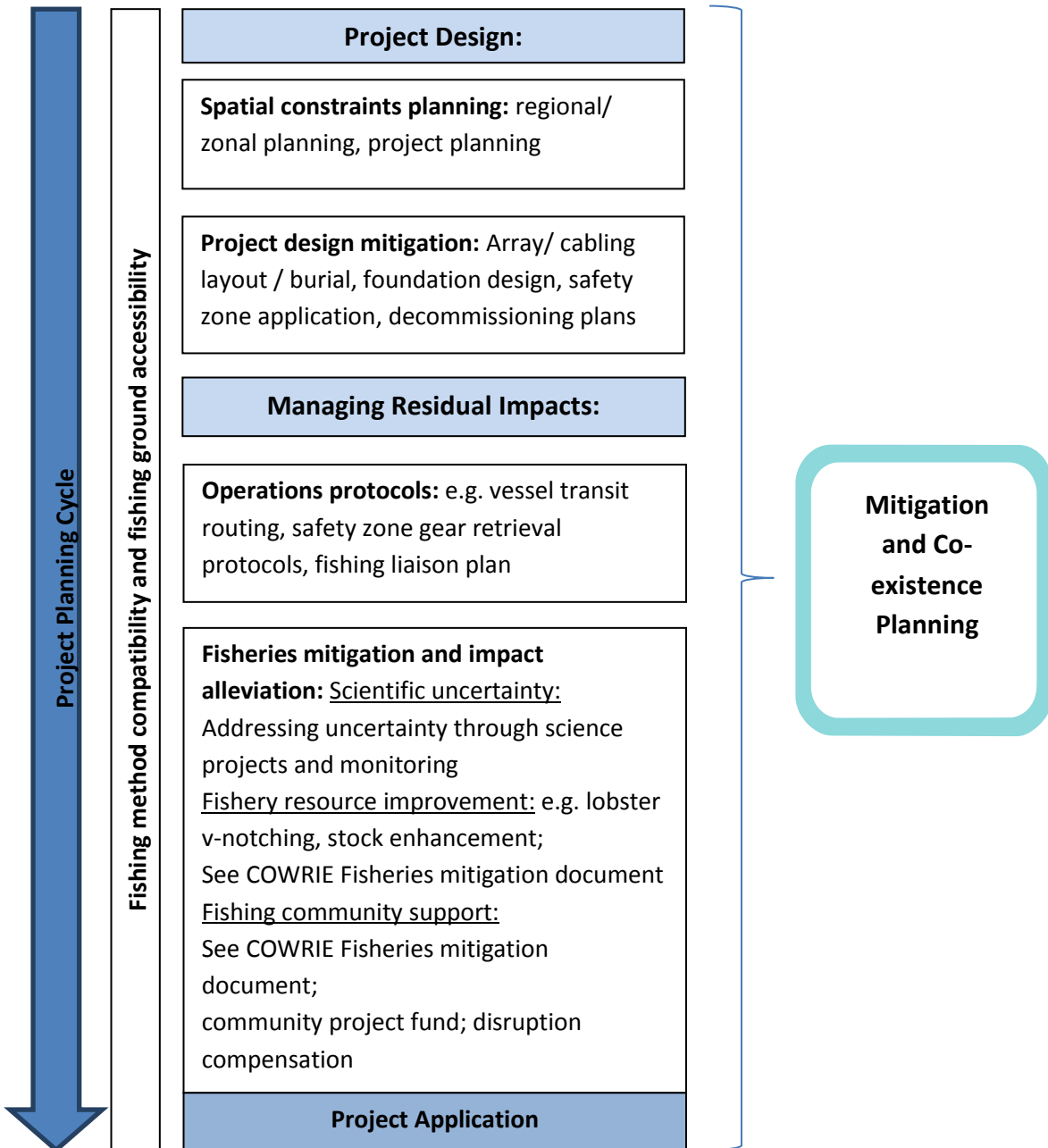
As described in Section 4, a Fisheries Liaison Plan could be developed at the start of the project planning phase, or alternatively could be implemented post-application and consent. Such a plan could include any mitigation and coexistence planning developed in consultation with fisheries stakeholders. For projects subject to the Planning Act consenting regime, such plans could help inform the development of statements of common ground which are required in support of the application. In Scotland, Mitigation Strategy documents are produced by the developer, and again the Fisheries Liaison Plan can feed into and inform these.

Guidance was produced by COWRIE (Collaborative Offshore Wind Research into the Environment) on options for the mitigation of impacts of offshore wind farms on fishing activities, and a number of its provisions are also applicable to the wave and tidal sectors. The guidance outlines mitigation suggestions for impacts at the pre-construction, construction and operational stages, and considers mitigation measures such as enhancing stocks, improvements to fishing vessels, improvements that enhance the profit margins of fishing activities, and the development of new fisheries or other activities. It suggests that the underlying aim and main focus of developers in developing mitigation should be to allow fishing to continue wherever possible rather than providing financial recompense .

The COWRIE guidance can be found at:

<http://www.thecrownestate.co.uk/media/354771/2010%20Options%20and%20opportunities%20for%20marine%20fisheries%20mitigation%20associated%20with%20windfarms.pdf>

The different aspects of mitigation and co-existence planning, and the different considerations that need to be made during the project planning cycle, are summarised in the diagram below:



7.1. Compensation for disruption and displacement

If co-existence is not possible, mitigation for disruption and displacement of fishing activity as a result of an OREI should be considered as the first priority, and commercial compensation should only be used as a last

resort when there are significant residual impacts that cannot otherwise be mitigated. However, compensation should only be paid on the basis of factually accurate and justifiable claims. There is therefore an obligation upon affected fishermen to provide evidence (such as three years' worth of catch records) to corroborate any claims.

Emphasis should be placed on early dialogue between the OREI developer and the affected fisheries stakeholders in order to understand the importance of the fishing ground and to be best able to reach a mutually satisfactory outcome. It is important to understand for example whether the area in question is heavily or lightly fished, how and when it is normally fished, the tradition of fishing activity in the area, and the revenue that can usually be earned from the area. The developers should work through their designated CFLO who should take advantage of local advice from sources such as IFCA, IFGs, local fishery officers and representatives of the national associations, and Fishermen's Federations, Producer Organisations and the Shellfish Association of Great Britain. Developers in the same strategic area should also engage with each other to consider whether their projects will have cumulative impacts.

It is not within FLOWW's remit to provide prescriptive advice on how compensation for disrupted and displaced fishing activity should be decided and calculated, however FLOWW recognises the development of key guiding principles for this process as an important area of work. Any further guidance to address these issues will be made available through the FLOWW website.

For an example of how compensation is calculated in other sectors, Seafish's *Best Practice Guidance for Fishing Industry Financial and Economic Impact Assessments* provides methods for calculating financial impacts as a result of areas closed or restricted to fishing:

<http://www.seafish.org/media/634910/ukfen%20ia%20best%20practice%20guidance.pdf>

7.2. Removal of fixed gear during surveys or construction

Surveying, construction and/or cable laying may require the temporary or permanent removal of fishing gear in order to facilitate access to a site and to prevent damage to both fishing gear and survey or installation equipment. If such removal is required developers should negotiate the details with the fishermen concerned prior to taking any action. The FIR should arrange for any affected fishermen to meet the developer as a group, as soon as the need for access is identified. This local knowledge should help identify the most likely owner of any static gear in the area.

Having an Onshore CFLO established during the survey or construction activity who is in constant contact with the Offshore CFLO will help facilitate effective and timely communication between the OREI developer and the local fishermen. Both parties should endeavour to work cooperatively in the spirit of openness and in a timely manner so that disruption to either party is minimised. Where reasonable costs are incurred any remuneration arrangements should be based on actual costs so that the affected party is neither advantaged nor disadvantaged as a consequence.

Some key considerations for dealing with situations where removal of fixed gear is necessary, and how to address possible claims for compensation, are provided in Appendix 5.

8. SAFETY ZONES

Safety zones are granted by DECC or the MMO during the construction, maintenance and decommissioning phases of an OREI development, in order to safeguard the safety of other users of the marine environment and the OREI itself. Once the project is fully constructed and operating normally, operational safety zones are only approved if there is a clear justification for their implementation.

8.1. Clarification of “safety zone” and “exclusion zone”

The Energy Act 2004 sets out the basic requirements for applying for a safety zone to be placed around or adjacent to an OREI. The legislation and supporting guidance refer to “safety zones” in relation to OREIs rather than “exclusion zones”; this latter term is often misused by stakeholders in relation to the offshore renewable energy industry due to past experience with the oil and gas industry. The term is set in oil and gas sector legislation and refers to a blanket 500m exclusion zone around above-surface oil and gas installations; these zones are permanent for the lifetime of the installation and are monitored by guard vessels and any unauthorised vessel operator encroaching is liable to be prosecuted. In contrast, safety zones as prescribed under the Energy Act 2004 are temporary in nature (except in exceptional circumstances) and as a consequence are of short duration and usually cover construction, major maintenance and decommissioning. Developers will only be granted a safety zone where a demonstrable safety-based case for doing so exists, i.e. the developer must provide evidence to suggest that the risk to human safety may be increased if a safety zone is not implemented.

8.2. Purpose and process

In 2007, Safety Zone Regulations were introduced to provide a formal mechanism for putting in place restrictions on vessel movements within certain distances of OREIs; subject to an acceptable and demonstrable safety case, safety zones can be established for any phase in the life of an OREI, i.e. construction, operation, extension, major maintenance and decommissioning. As a general rule, safety zones are granted by DECC, however, where MMO has granted a Section 36 consent (under the Electricity Act 1989) for projects less than 100MW in the sea off England and Wales, the MMO will be the relevant regulatory authority. The following items may be included in a safety zone application: wind turbines, offshore sub stations, met masts and wave or tidal stream devices. Intra-array and export cabling cannot generally be covered by a safety zone application; however, such cables may be indirectly covered where they lie within a safety zone around relevant installations, and safety zones may exist around vessels engaged in cable laying / remediation activities.

Typically, offshore wind farms safety zones have been for a 50m zone around the turbine bases and 500m around construction zones / vessels engaged in construction activities; in some cases 50m safety zones have also been granted around wind turbines or foundations where work is not actually in progress but where work has yet to be finished e.g. where a turbine is waiting to be commissioned. Given the relatively new nature of the wave and tidal stream sector, appropriate safety zones for these types of development have yet to be established. However, it is anticipated that where there is a justification for imposing an operational safety zone, this will draw upon best practice and experience gained from offshore wind

developments. The relevant regulatory authority will need to consider, in consultation with other marine navigation and safety stakeholders (e.g. the MCA, Trinity House and others) and the developer, whether the standard dimensions for safety zones established for offshore wind farms are appropriate for the wave or tidal stream device and, if so, what part of the device’s structure they should be measured from, in order to ensure that the movement of the device (or parts of it) through the water and any moorings or cables will be adequately covered.

FLOWW recognises that our understanding of what safety zones may be appropriate for wave and tidal stream devices is evolving; it is anticipated that future revisions to this best practice guidance will be required in order to reflect the experience and processes for implementing safety zones that will have been established.

Once an OREI is fully constructed and operating normally, operational safety zones will only be approved if a clear justification for its implementation can be provided. In exceptional circumstances safety zones may be granted to cover the operational life of an installation; (anomalies also exist where some early offshore wind farms consented under the Transport and Works Act have Orders in place which refer to “construction exclusion zones”. It should however be noted that not all OREIs have safety zones in place or will apply for them as it is not mandatory; to date, some offshore wind farms have been constructed without safety zones.

However, in all situations a precautionary NtM for vessels operating in the vicinity of the OREI and associated offshore structures will be issued by the MCA and UKHO, advising a minimum clearance of 50m.

The table below summarises the current safety zone regime for OREIs, however it should be noted that wave and tidal stream devices might not necessarily follow the same process as traditionally used for offshore wind developments:

TYPE OF SAFETY ZONE	AREA COVERED
CONSTRUCTION 1	Typically up to 500m around single offshore renewable energy installations under construction. This is usually evidenced by the presence of a jack-up rig or other large vessels. Other large construction vessels, such as a cable-lay vessel, will also typically be surrounded by a mobile 500m safety zone.
CONSTRUCTION 2 (pre-commissioning)	Typically up to 50m around offshore renewable energy installations where construction has finished but some work is on-going e.g. turbine incomplete or in the process of being commissioned.
OPERATION	Where this can be justified up to 50m where an offshore renewable energy installation is in operation.
MAJOR MAINTENANCE	Typically up to 500m when major maintenance is in progress. This is usually evidenced by the presence of a jack-up rig or other large vessel.
DECOMMISSIONING	Typically up to 500m at the end of the working life of an offshore renewable energy installation when it is being decommissioned. This is usually evidenced by the presence of a jack-up rig or other large vessel.

Further guidance from DECC on applying for safety zones around OREIs, for use by developers and stakeholders, is available at: <https://www.og.decc.gov.uk/EIP/pages/files/file40651.pdf>

The Electricity (Offshore Generating Stations) (Safety Zones) (Application Procedures and Control of Access) Regulations 2007 are available at:

<http://www.legislation.gov.uk/ukxi/2007/1948/contents/made>

8.3. Planning safety zones

Developers should communicate and discuss plans for safety zones during the pre-application stage of project development and liaison with fisheries stakeholders on planned safety zones should take place during the EIA process, where reasonably practicable. As stated above, different industries in the marine environment require and utilise different safety zones, and so fisheries stakeholders should be made aware that there are differences between the safety zone in place around an OREI and for example, the exclusion zone around an oil and gas installation.

Developers are required to give consideration to the navigation safety case for a safety zone at the time the Environmental Statement supporting their consent application is prepared and include a high-level statement indicating whether a safety zone may be required. Safety zone applications themselves are normally submitted some months (and in some cases years) after the consent has been issued and must be advertised in accordance with the guidance referenced above.

8.4. Communication of safety zones

Where safety zones have been approved developers are required to bring these to the attention of mariners with as much advance warning as possible via frequent NtMs and other means e.g. the Kingfisher Bulletin, VHF radio broadcasts etc. (see Section 4 on information dissemination).

For a general overview of planned offshore works and related safety zone activity reference should be made to the offshore renewables supplement of the Kingfisher Bulletin at:

<http://www.seafish.org/fishermen/kingfisher/fortnightly-bulletin>

9. USE OF FISHING VESSELS DURING SURVEY/CONSTRUCTION/OPERATION ACTIVITIES

For some stages of an OREI project, there may be opportunities to employ fishing vessels and personnel, e.g. during survey work for the EIA, as 'guard' vessels during installation and construction activities. Although such opportunities are a means of involving the fishing industry more closely with the project, with some financial benefit, vessels will need to meet relevant MCA health and safety standards and training requirements.

9.1. Fishing vessels used during surveys

Opportunities may be identified for the use of fishing vessels during pre-application surveys; for example, fishing vessels would tend to lend themselves to sampling work undertaken as part of the fish ecology studies. However, in order to do so, fishing vessels must meet the high safety and operational standards required by the offshore renewable energy industry.

The guidelines on guard vessels provided in Appendix 6 should be used as examples of best practice when employing a vessel to undertake survey work. It is particularly important to ensure that adequate safety standards are in place and maintained that apply to all personnel on board the vessel, whether they are the routine vessel crew or a survey sub-contractor placed on the fishing vessel. RenewableUK and The Crown Estate are developing a series of health and safety guidelines for the offshore renewable energy industry, and have produced a Vessel Safety Guide for vessels involved in surveys and installation of measuring instruments during an OREI's development:

<http://www.renewableuk.com/en/publications/index.cfm/vessel-safety-guide>

It should be noted that the qualifications held in the fishing industry do not directly correlate with the Merchant Navy standards described in the above guidance document; however they are recognised by the Department for Transport and consequently the MCA, whose requirements (as described in Appendix 6) form the minimum standards that are currently worked to when employing fishing vessels for guard vessel and survey vessel duties.

9.2. Fishing vessels and personnel used during construction and operation

Opportunities may exist for personnel from the fishing industry to be employed directly on vessels involved in the construction and/or the operational and maintenance of an OREI (as an Offshore FIR), or for fishing vessels to be used as 'guard vessels'. This will vary from project to project and will depend on the standards implemented by the vessels and the associated certificates required of the Offshore FIR. As with the selection of vessels for survey work, the personnel and vessels will have to be selected carefully by the OREI developer to ensure that industry health and safety standards will be met.

9.2.1 Offshore FIR - guides on construction/maintenance vessels

In recent years fisheries organisations have encouraged cable installation and maintenance vessels and, in certain instances, oil and gas related vessels, to employ a representative from the local fishing community

on board. There may be occasions when this is appropriate for vessels during the construction period of OREIs and this is something that FLOWW would encourage individual developers to consider. In normal circumstances the provisions laid down in the International Regulations for Preventing Collisions at Sea (COLREGs) 1972 are sufficient to ensure that actions taken by fishing vessels and those restricted in their ability to manoeuvre when two vessels are approaching allow both to continue operating with a minimum of disruption. However, the Offshore FIR would use existing knowledge to develop acceptable working patterns and to offer advice to the officers of the construction and/or maintenance vessels on how to minimise or avoid unnecessary interruptions between the fishing and OREI industry activities.

In the offshore oil and gas sector anyone going offshore needs to have valid offshore medical and sea survival certificates. Such certification is also required of fishermen working on OREI construction/maintenance vessels and they should accordingly ensure that they hold the relevant certification in order to be able to be appointed as the Offshore FIR.

9.2.2 Guard vessels

Guard vessels may be required during the construction phase as well as during major maintenance and cable repair campaigns. At times, guard vessels may be required to patrol safety zones that may be in place during normal operational activity. Additional details are contained in Appendix 6 which also contains information on the safety standards which such vessels are required to meet.

Where possible and where the vessels proposed are suitable and are available at competitive rates, consideration should be given to employing local fishing vessels to carry out guard vessel duties. Developers should note that there are clear standards applied by the MCA for fishing vessels engaged as guard vessels which must be adhered to; these are contained within the Small Commercial Vessel and Pilot Boat (SCV) Code, which can be accessed by the MCA's Marine Guidance Note (MGN) 280:

http://www.dft.gov.uk/mca/mgn_280-2.pdf

Guard vessel good practice guidance has been produced by the oil and gas industry and the Fishermen's Federations, much of which can usefully be applied to the OREI industry:

http://www.marinesafetyforum.org/upload-files//guidelines/guard-vessel-good-practice_revision-1_dec-2010.pdf

10. FOULING OR LOSS OF GEAR/EQUIPMENT

Fouling or loss of gear and equipment may occur when fishing activity takes place in close proximity to any offshore infrastructure; in turn, some OREIs also have the potential to be fouled themselves, for example, wave and tidal stream devices may have mooring lines or sub-surface cables which could be impacted by the loss of fishing gear at some distance from the site. 'Lost' objects from survey or installation activities may also form a fouling hazard; the terms of the Agreement for Lease that The Crown Estate holds with an OREI developer requires all lost objects to be recovered, and Marine Licenses also require that developers keep a log of items loaded onto and off of vessels and there is an obligation for developers to recover any items lost at their own cost. However, it is recognised that recovery is not always possible. In the event of fouling an established procedure, which is described below, should be followed.

10.1. Legal considerations applying to submarine cable protection

The United Nations Convention on the Law of the Sea (UNCLOS) 1982 sets out core legal principles that apply to international cables and which dictate fishermen's responsibilities when it comes to avoiding fouling and/or damaging submarine cables:

- The freedoms to lay, maintain and repair cables outside of territorial seas, including cable route surveys incident to cable;
- The requirement that parties apply domestic laws to prosecute persons who endanger or damage cables wilfully or through culpable negligence (see below for relevant UK legislation);
- The requirement that vessels, unless saving lives or ships, avoid actions likely to injure cables;
- The requirement that vessels must sacrifice their anchors or fishing gear to avoid injury to cables; and
- The requirement that cable owners must indemnify vessel owners for lawful sacrifices of their anchors or fishing gear (see below).

Further information can be found in the United Nations Environment Programme report on submarine cables:

http://www.unep-wcmc.org/biodiversity-series-31_94.html

Two Acts of Parliament apply to and protect cable operations, including submarine power cables in the UK; the Submarine Telegraph Act (STA) 1885 and the Telecommunications Act (TA) 1984 have the following implications for OREI developments and their intra-, inter-array and export cables:

- It is a punishable offence to break or injure any submarine cable, either wilfully or by culpable negligence (STA 1885). Section 8 of the Continental Shelf Act 1964 extended the provisions of the Act to cover all submarine cables and pipelines including high voltage electrical cables;
- Owners of vessels that can prove that they have sacrificed equipment (such as fishing gear) in order to avoid injuring a submarine cable shall receive compensation from the cable owner (STA 1885). This means that the compensation regime will therefore cover all cables and pipelines in the territorial sea and UK Continental Shelf;
- The Secretary of State shall not approve any plan unless he is satisfied that any person affected by those works has been adequately compensated (TA 1984);

10.2. Fishermen fouling their gear

OREI developers will seek to bury inter-array and export cables where possible. However, seabed mobility may leave cables spanning areas of uneven seabed and this in turn may cause fishing gear to be snagged and may place the fishing vessel in danger. Some parts of the cables, such as cable crossings, may require protection measures such as matting or rock dumping which could represent an additional risk to fouling of gear. Although co-existence of the fishing and offshore renewable energy industries is to be aspired to, the risks of fishing in the vicinity of an OREI should be recognised by fishermen and their activities should be conducted responsibly.

It is important to ensure that structures and obstructions are widely communicated by the developer via methods such as Notices to Mariners, Seafish's Kingfisher Division and Kingfisher Bulletins in the first instance (see Section 4.6). The Kingfisher Division of Seafish manages the KIS-ORCA project, which along with renewable energy installations, also provides the latest information & positions of all subsea cable routes including cable protection via information charts and plotters:

<http://www.kis-orca.eu>

Fishermen should take note of information they receive on the presence of submarine cables and other sub-surface OREI infrastructure in their vicinity as part of conducting their fishing activity in a responsible way.

10.3. Action in the event of lost gear

In the event that equipment or gear is lost during survey or construction work for an OREI, the developer should immediately alert the local Coastguard; the marine licensing authorities and The Crown Estate should also be notified. The Kingfisher Division or Seafish should also be notified, so that details of the potential hazard can be disseminated to the fishing industry via the Kingfisher Bulletin and the KIS-ORCA website.

The FIR should also be informed of the details of the lost equipment and gear immediately so that this information can be disseminated to the local fishermen most likely to be affected by the potential hazard, and should be kept closely informed of any subsequent attempts to recover them so that updates can be provided.

As noted above, some OREIs such as wave and tidal stream devices have the potential to be fouled lost fishing gear. When operating in the vicinity of an OREI, fishermen should endeavour to inform the developer as soon as possible of any lost fishing gear, in order to allow the risks of fouling to be mitigated and managed.

10.4. Action in event of fouling

Fishermen are reminded of the need to exercise extreme caution when fishing in areas where OREI structures and associated submarine power cables are located, particularly due to the risk of damage to cables or nets.

In the event that a skipper believes that a cable or OREI has been fouled he should initially attempt to free his gear. In the event that immediate release is not possible, or if the skipper believes that there may be a risk to crew or vessel, then a 'call-in' should be made immediately to the local Coastguard who should have been previously instructed to inform the developer/operator concerned of any reported incidents. It is the responsibility of the developer/operator concerned to ensure that they submit their contact details, e.g. a 24-hour contact number, to the Coastguard.

If personal safety, weather and other conditions permit, the fishing vessel skipper should make all reasonable efforts to contact the developer before taking any actions that might further damage any submarine cabling or infrastructure connected with the OREI. If the fishing gear must be sacrificed in order to avoid damaging a submarine cable then the details of the incident should be recorded, in line with the general principles for claims due to fouling that are outlined Section 11. If the gear is slipped, it should be buoyed if possible its location confirmed to the Coastguard.

Following the reporting of the incident and once the immediacy of the problem has passed the skipper of the vessel concerned should contact his local fisheries officers and arrange for a visit from them immediately upon arrival of the vessel back in port. In order to guard against any inadvertent damage to the submarine cable or OREI infrastructure, it will be the developer or operator who must instigate any recovery of the lost fishing gear.

Useful links:

The KIS-ORCA interactive map of OREIs and subsea cables:

<http://www.kis-orca.eu/map>

The Crown Estate's published maps and GIS datasets of offshore renewable energy and other offshore infrastructure and activity:

<http://www.thecrownestate.co.uk/energy-infrastructure/downloads/maps-and-gis-data/>

Subsea Cables UK Emergency procedures for fouling gear:

<http://www.subseacablesuk.org.uk/emergency-procedures/>

11. DEALING WITH CLAIMS ASSOCIATED WITH FOULING OR LOSS OF GEAR/EQUIPMENT

OREI developers have a responsibility to effectively disseminate information on the location of submarine cables and OREI infrastructure and fishermen have a responsibility to take note of it and to conduct their fishing activities appropriately. There can be no automatic assumption over liability after fastening to an OREI device or associated infrastructure and any claims for compensation should be supported by evidence. Claims will be dealt with on an individual basis by the relevant developer. Any further guidance developed to address this issue will be made available through the FLOWW website.

This section discusses the process for dealing with claims that result due to loss of or damage to equipment due to fouling; the procedures to take in the immediate event of fouling are described in Section 10. Mitigation and compensation for disruption and displacement of fishing activity are discussed elsewhere, in Section 7.

11.1. Claims due to fastening to renewable device or associated structures

Unlike with cables (see Section 10), there is no legislation that covers compensation for fouling on the structure of the OREI itself, be it a wind, wave or tidal stream device; this includes foundations, submarine elements of the device, inter-array cables, survey equipment such as met masts and met buoys, and offshore substations. However, it is suggested that best practice would be to follow the procedures established for submarine telecoms or power cables, which is described below.

FLOWW is mindful that there are a number of matters on this issue where further clarification may be beneficial e.g. the impact of safety zones in particular. Any further guidance developed to address these issues will be available through the FLOWW website.

11.2. Claims due to fastening to a submarine cable

As described in Section 10, under the Submarine Telegraph Act 1885 cable owners are obliged to compensate the owners of vessels who can prove that they have been required to sacrifice an anchor, net or other fishing gear in order to avoid damaging a submarine power cable. In the context of OREIs, submarine cables include cables linking individual structures within an OREI site, cables between different OREI projects or sites, and export cables.

As discussed elsewhere in this guidance, co-existence of OREIs and fishing activities is to be aspired to; nonetheless FLOWW also notes that there are certain areas of an OREI where trawling could be hazardous and as such fishermen should be aware of these areas and may need to amend their fishing activity accordingly (see Section 10). As the circumstances are likely to be different for each OREI development it would be a matter for individual developers and the fishermen affected to reach a mutually agreeable position, during the project planning phase.

11.3. General principles in claims for fouling

The process for making claims in the event of fouling in association with an OREI is still being developed, and a best practice approach has yet to be adopted by the offshore renewable energy industry. However,

some general principles can be applied; the focus must be on the provision of suitable evidence to allow verification that a claim for fouling is justified and attributable to the OREI, for example taking photos at sea of the fouled gear, particularly if it is to be returned overboard for safety reasons.

If a fisherman feels they may have a claim for compensation for loss of gear they should contact the local fisheries officers and the relevant developer / operator of the OREI, within 24 hours of arrival in port. Full particulars of the incident should be given and full details recorded in the official log, including:

- The date and exact time of the incident;
- The vessel's position at the time of the incident;
- The depth of water; and
- A description of the structure or cable if sighted.

The compensation will be determined based on the repair/replacement costs and loss of income (see Section 7 for and Appendix 5 suggested considerations) and only where the loss can be proven to be unavoidable and unintentional. If agreement cannot be reached on compensation, then parties may agree a third party for arbitration. All parties should be prepared to accept the ruling of an independent body where they are unable to reach agreement on certain issues.

FLOWW recognises that developing and adopting an approach for claims for fouling for OREIs would be beneficial to both industries. Any further guidance developed to address this issue will be available through the FLOWW website.

11.4. Dealing with non-attributable claims

At times, snagging of fishing equipment may have occurred on equipment or sub-surface structures for which an owner or operator cannot be identified. In turn, unattributed fishing gear in the water or on the seabed may pose a hazard and be detrimental to OREI survey or construction activities. In such cases, there is still a need for a framework for reporting and demonstrating damage that has occurred. Any further guidance developed to address this issue will be available through the FLOWW website.

Appendix 1 - Offshore Renewable Energy Installations

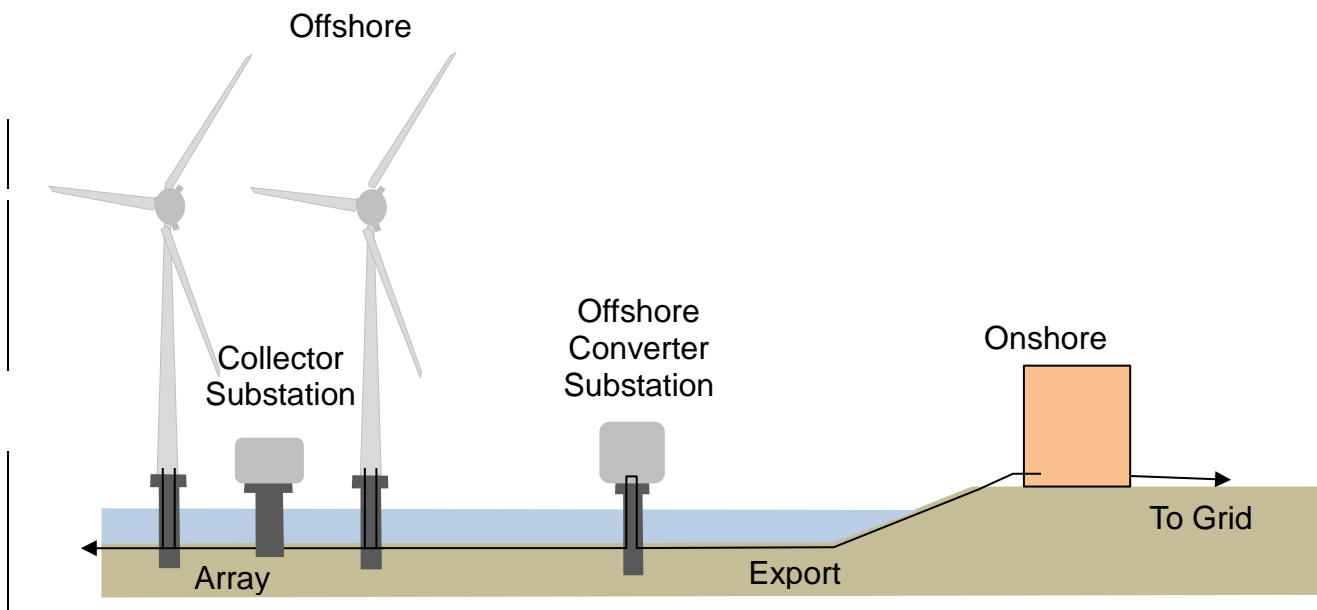
Offshore Wind Turbines:

Offshore wind turbines are currently of horizontal axis design, with three blades that capture the wind energy. At time of writing, the largest turbines are of capacity 5MW.

Typical foundations types are illustrated on the next page. Floating wind turbines are an emerging technology, consisting of a turbine mounted on a floating structure that is anchored in some way to the seabed. Floating wind is still at the 'test and demonstration' stage in the UK, and any advances in the technology will be included in future revisions of these guidelines.

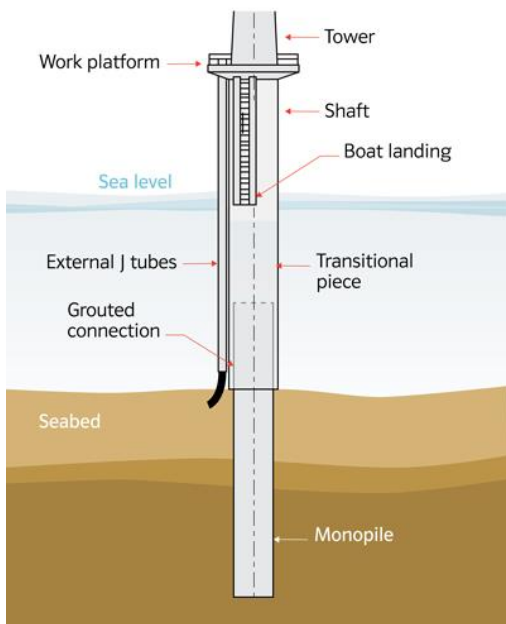


A typical wind farm layout is illustrated below:



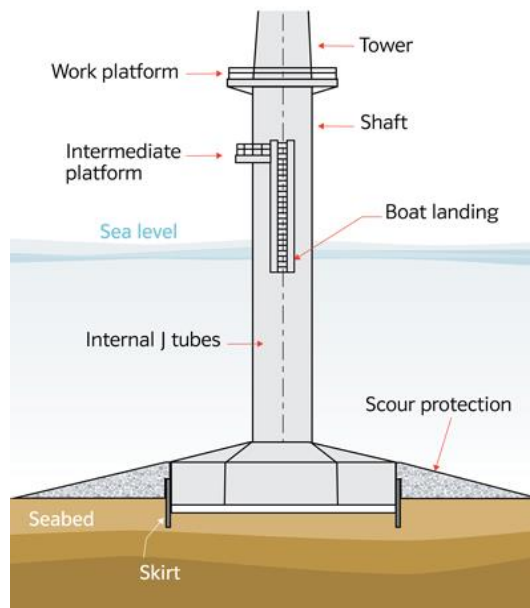
Offshore Wind Farm Foundation Types:

Monopile



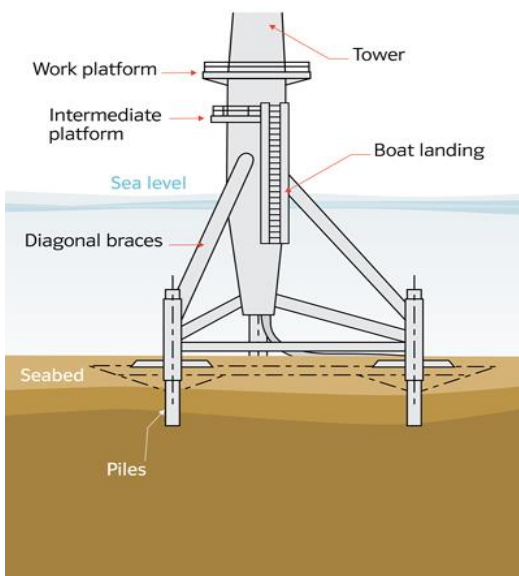
Monopile foundations are long steel tubes driven into the seabed using a hydraulic piling hammer, sometimes assisted by drilling where ground conditions are more difficult.

Gravity base structure



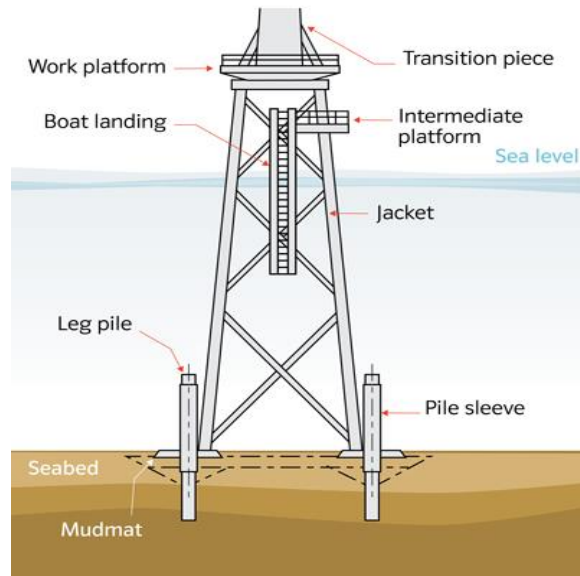
Gravity base foundations are large diameter concrete and/or steel structures. They're often internally ballasted to create a large stable mass after they're placed on to the seabed.

Tripod



Tripod foundations have a single vertical column above the water level, with subsea diagonal braces which transfer the turbine's weight to three legs fixed in a triangular arrangement. Piles are installed at each leg position to anchor the tripod to the seabed.

Jacket



Jacket foundations consist of three or four legged steel lattice structures secured to the seabed with piles at each leg position. This foundation type is very common in the oil and gas sector and a number of variations are available.

Wave Energy Devices:

There are a variety of different wave devices. All convert energy from the oscillating motion of the wave. Some devices float on the water, and are held in place using guidelines, others have fixed foundations to the seabed. A small example of wave energy device types can be found below; further information on tidal energy devices can be found at: <http://www.emec.org.uk/marine-energy/wave-devices/>



Pelamis

The Pelamis is an offshore wave energy converter that uses the motion of waves to generate electricity. The machine operates in water depths greater than 50m and is typically installed 2-10km from the coast. The machine is currently rated at 750kW with a target capacity factor of 25-40 per cent, depending on the conditions at the chosen project site. On average one machine will provide sufficient power to meet the annual electricity demand of approximately 500 homes.

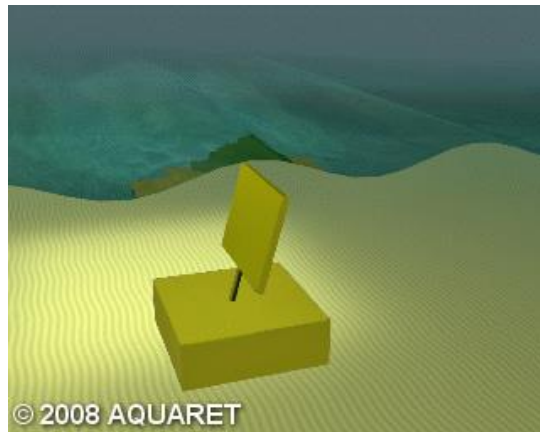
(Image: Pelamis Wave Power)



Oyster

The Oyster captures energy from nearshore waves; its hinged flap, which is almost entirely underwater, pitches backwards and forwards in the nearshore waves. The movement of the flap drives two hydraulic pistons which push high pressure water onshore via a subsea pipeline to drive a conventional hydro-electric turbine.

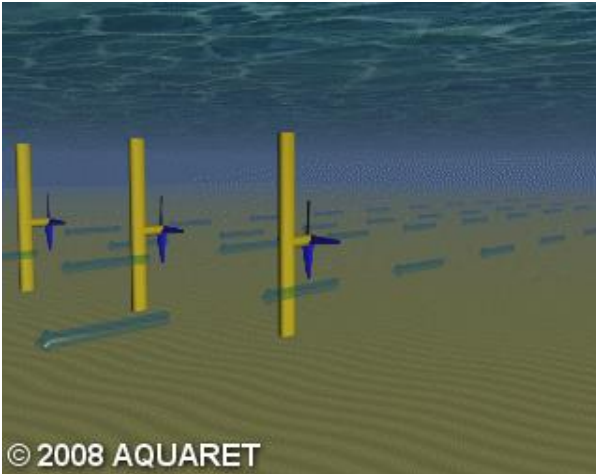
(Image: Aquamarine Power)



Tidal Stream Power:

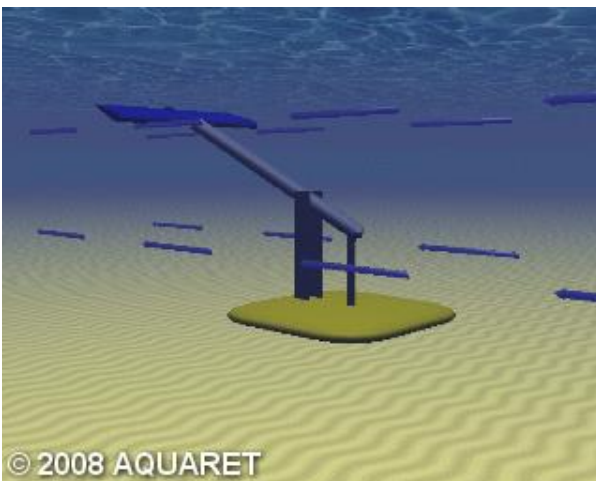
Tidal stream devices capture the energy from the ebb and flow of the tides, which is a continuous current. As water is denser than air, the devices can be much smaller than a wind turbine. They are fixed to the seabed, and capture the energy via rotors that turn in the current. A small example of wave energy device types can be found below; further information on tidal energy devices can be found at:

<http://www.emec.org.uk/marine-energy/tidal-devices/>



Horizontal axis

Horizontal axis turbines extract energy from moving water in much the same way as wind turbines extract energy from moving air. The tidal stream causes the rotors to rotate around the horizontal axis and generate power



Oscillating hydrofoil

A hydrofoil is attached to an oscillating arm. The tidal current flowing either side of a wing results in lift. This motion then drives fluid in a hydraulic system to be converted into electricity.



Tidal kite

A tidal kite is tethered to the sea bed and carries a turbine below the wing. The kite 'flies' in the tidal stream, swooping in a figure-of-eight shape to increase the speed of the water flowing through the turbine.



Offshore Substation

The offshore substation collects the electricity generated from across the windfarm, and converts it to a higher voltage for The substation will normally house cable connections and transformers. The foundations can be monopole or can be jacket.



Offshore Accommodation Platform

An accommodation platform would be used during construction and operation to house employees. It can comprise offices, living quarters and kitchens. The platform can be a structure similar to an offshore substation with monopole or jacket foundations, or alternatively a vessel can be used as a floating hotel, as pictured.

(Image: DONG Energy)



Construction and Maintenance vessels

A variety of vessels will be used during the construction of an OREI. This could include:

- Geophysical survey
- Mammal and bird survey
- Foundation installation
- Substation installation
- Turbine installation
- Array cable laying
- Equipment transfer
- Personnel transfer

In addition, fishing vessels may also be used for some of the survey work, and for guard vessel duty. There may also be opportunities in equipment and personnel transfer.

UK Fishing Industry

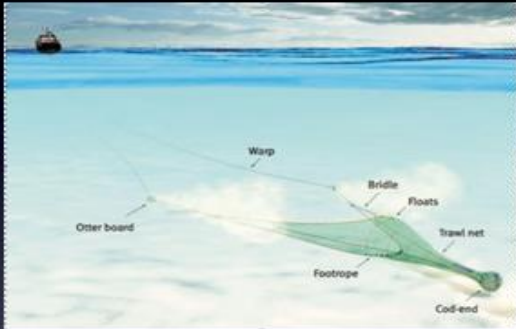


Landings by UK vessels were worth 700 million for first hand sales



Trawling

Trawling



Trawl Doors



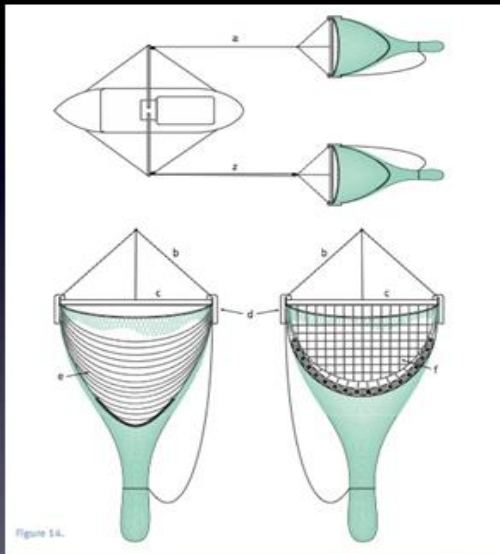
Twin Rig



Pair Trawling



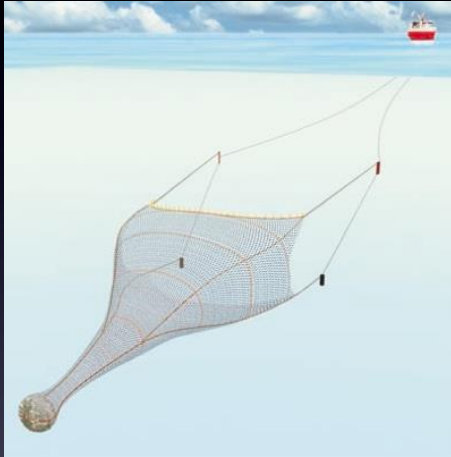
Beam Trawl



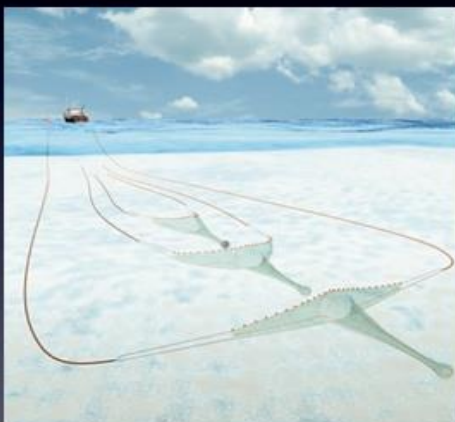
Pelagic Pair Trawling



Pelagic Single Trawl



Seine Netting



2.5 miles of rope per side



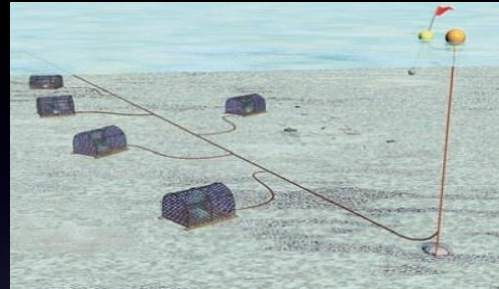
Pair Seining



Purse Seining



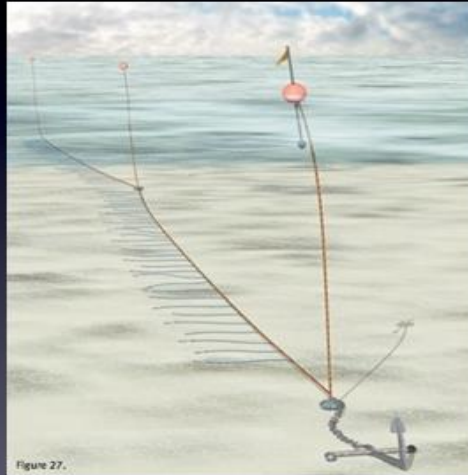
Creeling



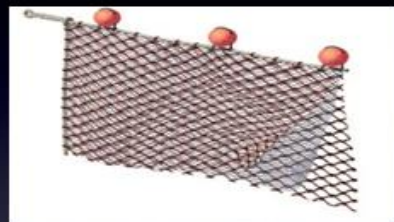
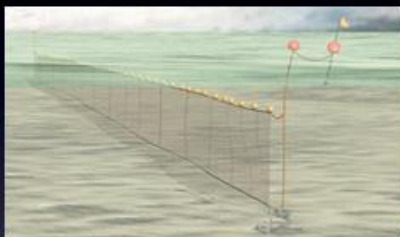
Scalloping



Long Lining



Gill & Trammel Netting



Aquaculture

Mussels, Oysters, Cockles & Clams



Oyster Farm



Mussel Farm

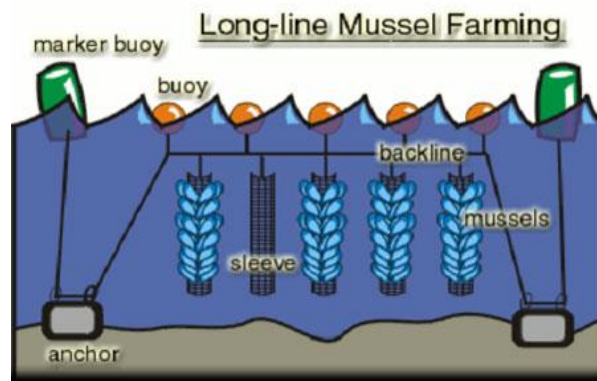


Image from dfo-mpo.gc.ca



Mussel dredging



Mussel landing

Appendix 3 – Key contacts

FISHING INDUSTRY CONTACTS	
Fishermen's Federations	
National Federation of Fishermen's Organisations (NFFO) - <i>England, Wales, Northern Ireland</i>	Website: http://www.nffo.org.uk/
Scottish Fishermen's Federation (SFF)	Website: http://www.sff.co.uk/ Email: renewables@sff.co.uk
Scottish Creel Fishermen's Federation	Website: http://www.scottishcreelfishermensfederation.co.uk/ Email: info@scottishcreelfishermensfederation.com
Associations	
Fishermen's Mutual Association (Pittenweem) Ltd	Website: http://www.kingdomseafood.co.uk/ Email: admin@kingdomseafood.co.uk
Shellfish Association of Great Britain (SAGB)	Website: http://www.shellfish.org.uk/ Email: david@shellfish.org.uk
Welsh Fishermen's Association (WFA)	Website: http://welshfishermensassociation.wordpress.com/
Isle of Man Fishermen's Association	Email: iomfishermen@manx.net
Fish Producers' Organisations	
Aberdeen Fish Producers' Organisation	Email: Af-po@btconnect.com
Anglo North Irish Fish Producers' Organisation (ANIFPO) - <i>Northern Ireland</i>	Website: http://anifpo.com/
Anglo-Scottish Fish Producers' Organisation	Email: andrew@asfpo.com
Cornish Fish Producers' Organisation (CFPO)	Email: cfpo@cfpo.org.uk
Eastern England FPO (EEFPO)	Email: eefpoltd@gmail.com
Fife Fish Producers' Organisation	Email: james.fyall@btconnect.com
Fish Producers' Organisation (FPO)	Email: chloe.rogers@ukfisheries.net
Fleetwood Fish Producers' Organisation	Email: kenmoran@btconnect.com
Klondyke Fish Producers' Organisation	Email: allan@taitgroup.com
Lowestoft Fish Producers' Organisation (LFPO)	Email: lowestoftpo@tiscali.co.uk
Manx Fish Producers Organisation	Email: iomfishermen@manx.net
North Atlantic Fish Producers Organisation	Email: snh@nafish.co.uk
North-East of Scotland Fishermen' Organisation (NESFO)	Email: robert.stevenson@nesfo.co.uk
Northern Ireland Fish Producers' Organisation Limited (NIFPO)	Email: nifpo@btconnect.com
Northern Producers' Organisation (NPO)	Email: office@northernpo.co.uk
North Sea Fish PO (NSFO)	Email: danbrit@mac.com

Orkney Fish Producers' Organisation (OFPO)	Email: orkneyfisheries@btconnect.com
Scottish Fishermen' Organisation Ltd (SFO)	Email: iain.macsween@scottishfishermen.co.uk
Shetland Fish Producers' Organisation (SFPO)	Email: brian@shetlandfishermen.com
South Western Fish Producers' Organisation (SWFPO)	Email: swfpo@btopenworld.com
Wales and West Coast Fish Producer's Organisation	Email: wwcfpo@hotmail.co.uk
West of Scotland Fish Producers' Organisation	Email: office@westofscotlandpo.free-online.co.uk
IFCAs and IFGs	
Association of the Inshore Fisheries and Conservation Authorities (IFCAs) - <i>England</i>	Website: http://www.association-ifca.org.uk/ A map of the IFCA boundaries can be found at: http://archive.defra.gov.uk/environment/marine/documents/interim2/ifca-map.pdf
Cornwall IFCA	Website: http://www.cornwall-ifca.gov.uk/ Email: enquiries@cornwall-ifca.gov.uk
Devon & Southern IFCA	Website: http://www.devonandsevernifca.gov.uk/ Email (Chief Officer): t.robbins@devonandsevernifca.gov.uk Email (office): office@devonandsevernifca.gov.uk
Eastern IFCA	Website: http://www.eastern-ifca.gov.uk/ Email: mail@eastern-ifca.gcsx.gov.uk
Isles of Scilly IFCA	Website: http://www.scillyifca.gov.uk/ Tel: 01720 424808
Kent & Essex IFCA	Website: http://www.kentandessex-ifca.gov.uk/ Email: info@kentandessex-ifca.gov.uk
North East IFCA	Website: http://www.ne-ifca.gov.uk/ Email: ne-ifca@eastriding.gov.uk
North West IFCA	Website: http://www.nw-ifca.gov.uk/ Email: office@nw-ifca.gov.uk
Northumberland IFCA	Website: http://www.nifca.gov.uk/ Email: nifca@nifca.gov.uk
Southern IFCA	Website: http://www.southern-ifca.gov.uk/ Email: enquiries@southern-ifca.gov.uk
Sussex IFCA	Website: http://www.sussex-ifca.gov.uk/ Email: admin@sussex-ifca.gov.uk

Inshore Fisheries Groups (IFGs) - <i>Scotland</i>	Website: http://ifgs.org.uk/ The IFG National Liaison Officer can be contacted via: g_white@seafish.co.uk A map of the IFGs can be found at: http://ifgs.org.uk/files/8013/7716/0930/IFG_Mapping_2_013.pdf
East Coast IFG	Email: G_White@seafish.co.uk
Moray Firth & North Coast IFG	Email: johncox@mfnf-ifg.com
North West IFG	Email: rsgconsult@live.co.uk
Orkney Management Group IFG	Email: stewart@ofsorkney.co.uk
Outer Hebrides IFG	Email: doninicholson@hotmail.com
South West IFG	Email: alastair.mcruaraidh.mcneill@gmail.com
Regional Advisory Councils	
North Sea Regional Advisory Council	Website: http://nsrac.org/ The North Sea secretariat contact can be contacted via: NSRAC@aberdeenshire.gsx.gov.uk
North West Waters Regional Advisory Council	Website: http://www.nwwrac.org/ The North West Waters secretariat can be contacted via: NWWRAC2@bim.ie
Pelagic Regional Advisory Council	Website: http://www.pelagic-rac.org/ The Pelagic secretariat can be contacted via: v.ohms@pelagic-rac.org

REGULATORY / GOVERNMENTAL CONTACTS	
Marine Management Organisation (MMO)	Website: http://www.marinemanagement.org.uk/fisheries/index.htm Contact details for local MMO offices: http://www.marinemanagement.org.uk/contacts/local.htm
Marine Scotland	Website: http://www.scotland.gov.uk/Topics/marine Contact details for Fisheries Offices: http://www.scotland.gov.uk/Topics/marine/Compliance/fishoffices Email (general enquires): marinescotland@scotland.gsi.gov.uk Email (marine licensing): ms.marinelicensing@scotland.gsi.gov.uk

<p>Maritime and Coastguard Agency (MCA)</p>	<p>Website: http://www.dft.gov.uk/mca/mcga07-home.htm</p> <p>Contact details for UK Marine Offices: http://www.dft.gov.uk/mca/mcga07-home/aboutus/contact07/marineoffices.htm</p> <p>General HM Coastguard/Search and Rescue enquiries: Email: SAR.Response@mcga.gov.uk Tel: 023 8032 9486</p>
<p>Natural Resources Wales - <i>marine licensing</i></p>	<p>Website: http://naturalresourceswales.gov.uk/apply-buy-report/apply-buy-grid/marine-licensing/?lang=en</p> <p>Email: marinelicensing@naturalresourceswales.gov.uk Tel: 0300 065 3000</p>
<p>The Kingfisher Division of Seafish (Kingfisher)</p>	<p>Website: http://www.seafish.org/fishermen/kingfisher</p> <p>Email: kingfisher@seafish.co.uk, Tel: +44 (0)1472 252307</p>
<p>United Kingdom Hydrographic Office (UKHO)</p>	<p>Website: http://www.ukho.gov.uk/</p> <p>General enquiries: Tel: +44 (0)1823 723 366 Radio navigational warnings: Email: navwarnings@btconnect.com Tel: +44 (0)1823 322352</p>
<p>Welsh Government</p>	<p>Website: http://wales.gov.uk/topics/environmentcountryside/foodandfisheries/fisheries/?lang=en</p> <p>Contacts and links across all sectors of the fishing industry: http://wales.gov.uk/topics/environmentcountryside/foodandfisheries/fisheries/contacts/contactsandlinks/?lang=en</p>
<p>Department of the Environment Northern Ireland - <i>marine licensing</i></p>	<p>Website: http://www.doeni.gov.uk/niea/apply_online/marine_construction.htm</p>

OFFSHORE RENEWABLE ENERGY INDUTRY CONTACTS	
RenewableUK	<p>Website: http://www.renewableuk.com/</p> <p>Main Office Address: Greencoat House, Francis Street, London, SW1P 1DH UK Tel: +44 (0)20 7901 3000 Fax: +44 (0)20 7901 3001</p> <p>Email: info@RenewableUK.com</p>
Renewable Energy Association	<p>Website: http://www.r-e-a.net/</p> <p>Address: 2nd Floor, 25 Eccleston Place, Victoria London, SW1W 9NF Tel: (020) 7925 3570 Fax: (020) 7925 2715</p> <p>Email: info@r-e-a.net</p>
Scottish Renewables	<p>Website: http://www.scottishrenewables.com/</p> <p>Address: 6th Floor, Tara House, 46 Bath Street, Glasgow, G2 1HG Tel: 0141 353 4980</p> <p>Email: info@scottishrenewables.com</p>

Appendix 4a - UK Hydrographic Office information requirements

Developers are required to inform the UKHO office on met mast location, survey area and construction area. Contact details: SDR@ukho.gov.uk

Preliminary Information

The initial information should be supplied to the United Kingdom Hydrographic Office (UKHO) as early as possible; 1-2 months prior to works commencing is considered a practicable timescale. Also, 1 week's notice of any subsequent significant changes would be required. This will enable the promulgation of the projected works to the marine community, by Preliminary Notice to Mariners (PNM) and/or Navigational Warning, at the earliest opportunity. If an anemometer mast is to be erected prior to the building of an OREI, full details of the structure should also be sent at the earliest opportunity. Information required:

- Geographic co-ordinates of site – positions of maximum extent of projected works;
- Period of projected works, e.g. May 2008 – April 2009;
- Details of lights, buoys and other navigational aids – positions/descriptions/whether temporary or permanent;
- Positions of projected cable route(s), from site to shore;
- Changes to existing routeing measures/vessel movement;
- Proposed routes of vessels involved in wind farm development (from port to site);
- Details of any safety zones, restricted areas or prohibitions;
- Details of extraction areas or dumping grounds.

Final Information

The Final Information should be supplied to the UKHO as soon as details become available. This information will be promulgated by permanent chart correcting Notice to Mariners as soon as possible after the receipt of the information:

- Positions of turbines, wave energy devices and other associated features [e.g. new masts];
- Maximum height of turbines, wave energy devices, turbine blades, above Mean High Water Springs (MHWS), or Mean Sea Level (MSL);
- Minimum clearance height of blades above MHWS or MSL;
- Radius of turbine blades;
- Positions and full descriptions of all permanent navigational lights, radar/radio aids, fog signals, air obstruction lights;
- Designations of each turbine [e.g. letters/numbers];
- Positions and full descriptions of associated buoys;
- Positions of 'as laid' cables, between turbines and from site to shore;
- Details of any special rules or regulations – if applicable, geographic co-ordinates of any associated area for which such rules or regulations apply;
- Effect wind turbines and wave energy devices may have on radar navigation systems (also AIS when introduced).

Note: if possible all positions to be quoted in World Geodetic System 1984 [WGS84], lat/long., in deg/mins & 3 dec places of mins; or in Ordnance Survey of Great Britain 1936 [OSGB36] lat/long or grid. If another Grid is used, datum should be quoted.

For further information please contact:

Mr Roger Cavill, United Kingdom Hydrographic Office, Admiralty Way, Taunton, Somerset TA1 2DN. TEL:

01823 337900 x 3634 FAX: **01823 325823**

roger.cavill@ukho.gov.uk UKHO Ref: HA123/001/004/02

Appendix 4b – The Kingfisher Division of Seafish - information requirements

Kingfisher's remit is to provide fishermen with the latest offshore industry activities and developments. Therefore, developers are required to inform Kingfisher of all activities and as-laid positional data, for inclusion in the Kingfisher Bulletin and KIS-ORCA project. Kingfisher can be contacted via kingfisher@seafish.co.uk.

As with the UKHO, positional and attribute information relating to the installation of structures, is required both before construction takes place and when as-laid data has been approved. Information relating to offshore activities, such as surveys, installation of monopiles, etc., should be provided to Kingfisher on a fortnightly basis, for onward dissemination to fishermen.

Kingfisher Bulletins (Fortnightly)

Kingfisher Bulletins provide fishermen with a concise fortnightly summary of offshore activities, which may affect their fishing operations. Information should be provided 1-2 months prior to works commencing and periodic updates should be maintained during activities. This will enable the promulgation of the projected works to the fishing community.

Information required for a notice in the Kingfisher Bulletin, includes:

- A concise summary of the developments activities and scale;
- Geographic co-ordinates of the site, or installation locations;
- Period of projected works, e.g. 01 May 2013 – 14 June 2013;
- Details of lights, buoys and other navigational aids – positions/description/etc;
- Details of any safety zones, restricted areas or prohibitions;
- Detail of vessels involved in the activities, e.g. name, call sign, contact details, etc.; and
- An emergency contact name and telephone number.

KIS-ORCA Project (Kingfisher Information Service – Offshore Renewable and Cable Awareness)

The KIS-ORCA Project provides fishermen with up to date information on the location of subsea cables and renewable emergency structures. Kingfisher manages the website <http://www.kis-orca.eu/> which includes the latest news and information relating to new development activities, installation of new structures, along with the latest news, operator and developer pages, fishing plotter downloads, and Kingfisher Awareness Flyers for each of the constructed wind farms which are available to view and download.

Information required for inclusion in the KIS-ORCA project, includes:

- As laid cable data, including telecoms cables and power cables, including wind farm export and inter-array cables;
- Details of all offshore structures, e.g. wind turbines, buoys, met masts, substations;
- Emergency contact numbers for all cables and offshore structures; and
- Details of all cable repairs as soon as they are made.

KIS-ORCA data is provided to the fishermen free of charge, in January each year.

For further information, please contact a member of the Kingfisher team on:

Tel: +44 (0)1472 252307

Email: kingfisher@seafish.co.uk

Appendix 5 – Guiding principles framework for compensation for removal of fixed gear

Some key considerations for dealing with situations when fixed fishing gear needs to be removed during survey or construction activities for an OREI are given below; these are intended to form a framework and are drawn from experience of FLOWW members as to what has worked well in the past. Any further guidance developed to address this issue will be made available through the FLOWW website.

In all cases, early dialogue with local fishermen during the planning phase of the project and well in advance of any survey work (and later construction work) being conducted should take place; this will allow the best chance of a mutually satisfactory agreement being reached between all parties.

Framework for agreeing compensation for removal of fixed gear

Previous OREI projects have followed the steps outlined below when conducting inshore surveys or construction work in areas where fixed fishing gear is used in order to reach agreement on compensation for the removal of the gear:

- Conduct early dialogue with local fishermen, without giving any information on exact locations for any survey/construction activities and keeping the detail quite broad and high-level;
- Select a local ex-fishermen to work on the developer's behalf who the fishermen will listen to and trust (i.e. an FIR);
- Carry out a survey to find out how many creels each fishing vessel is using, where they are located and the value per creel per week;
- Once a survey/construction/installation date has been confirmed, organise a meeting with the fishermen, relevant fishing organisation and FIR to discuss the activity and agree an appropriate compensation figure by using the information previously gathered;
- Alternatively, an 'inconvenience payment' could be agreed with the fishermen; this would be a fixed figure paid to each vessel rather than a figure being paid on the basis of how many pots/creels etc. each fisherman uses in the area;
- The FIR liaises with fishermen and assures the developer that all creels have been moved prior the survey/construction vessel start date;
- Once survey /construction activity is complete the FIR notifies fishermen when it is clear to replace their fishing gear.

Actions in the event of gear removal being necessary and subject to agreement with fishermen

It may be possible to agree with local inshore fishermen before the survey/construction work that static gear such as lobster pots are simply removed to an alternative location offshore that is out of the way of the survey/construction activity, rather than being brought ashore. Actions to consider when re-locating gear offshore include:

- Agree before the survey/construction activity the preferred location for redeployment of gear – this is likely to be close to, but outwith, the survey/construction area (note: gear can only be removed if this has been agreed with the local fishermen);

- Video log all actions (also consider CCTV and photographic evidence);
- Instruct the guard vessel (or similar suitable vessel which can safely remove the gear without damaging it) to carefully haul the fishing gear, retaining any catch within the pots;
- Carefully redeploy the fishing gear and plot the new GPS position(s);
- Maintain a full record of any fishing gear removed in the removing vessel's log; and
- Inform the owner of new position.

In the even that gear cannot be re-located and needs to be brought ashore, actions to consider are:

- Video log all actions (also consider CCTV and photographic evidence);
- Haul the gear and return any catch to the sea;
- Plot the position of the gear by GPS;
- Record the number of pots and any markings;
- Label gear with reference number corresponding to the plotted position;
- Carefully and properly bring the gear ashore;
- Securely store the gear and make it available for collection to anyone able to prove ownership; and
- Keep full records of any gear removed in the removing vessel's log.

It should be noted that all gear should be clearly marked, and the steps outlined above assume that this is the case. If the gear is not clearly marked and consequently cannot be identified, then the developer should work with the FIR in consultation with the local fisheries officer to contact local fishermen to arrange for a local vessel to recover the gear.

Appendix 6 – Use of local vessels as guard vessels

These guidance notes can be applied whenever the services of a guard vessel are perceived by the OREI developer or the developer's agent (hereafter 'the developer') to be of benefit to their offshore operations.

Developer's Responsibilities

The developer should be responsible for ensuring that the guard vessel and operating crew is suitably equipped, certificated and capable of undertaking the duties required.

The guard vessel should be responsible to the developer's offshore representative or the FIR as appropriate. In the absence of both, then clear lines of communication should be established.

Guard vessel duties

These will generally consist of:

- Complying with the developer's Health and Safety Requirements
- Complying with the COLREGS;
- Providing protection, for as long as agreed between the parties, for any exposed and vulnerable structures, cables etc. as specified by the developer;
- Liaising with skippers of vessels operating in the vicinity of the project so as to ensure that those vessels are given early and adequate warning to enable them to take action to avoid any dangers that exist;
- Liaising with any other marine craft as necessary;
- Making broadcasts at frequent intervals giving details of the area to be protected. These should be made on the appropriate working channels used by fishing vessels.

Skippers of the guard vessels should be required to:

- Keep a detailed log of broadcasts made, vessels contacted/sighted etc.;
- Prepare a detailed written report of any incident of fishing vessels or other marine traffic not responding to radio contact and warning signals thereby threatening the integrity of any aspect of the project;
- Advise the developer or the FIR/FLO⁷ immediately of any incident;
- Effect the agreed protection for the entire time period agreed with the developer.

The guard vessel will not leave the area that it has been assigned to monitor except:

- a) With the express consent of the developer;
- b) In accordance with SOLAS regarding distress calls, together with any call necessitated thereby to any port or ports for fuel or other supplies;

⁷ Note: the Fisheries Liaison Officer (FLO) is a term more commonly used in the oil and gas industry, but for the purposes of this guidance the FLO's role and responsibilities can be taken to be equivalent to that of the FIR.

- c) For reasons of safety of the vessel or personnel on board that vessel. For the avoidance of doubt the skipper of the guard vessel shall have absolute discretion concerning matters of safety relating to his vessel or the personnel on board.

Guard vessel specification

If fishing vessels are to be used as guard vessels, they should be:

- British Registered Fishing Vessels;
- Meet MCA statutory safety specifications for fishing vessels;
- Be in possession of a valid MCA Safety Certificate(s) or exemption certificate that permits use of the vessel and its personnel to act in the capacity of a guard vessel. In this regard it should be noted that certain minimum standards have been set, in the oil and gas industry, in respect of guard vessels. Local fishing vessels recruited as guard vessels must carry a 'Load Line Exemption' or a 'Brown Code Work Boat Certificate' which is issued by the Maritime & Coastguard Agency (MCA). In order to maintain common high safety standards, vessels working with the offshore renewable energy sector should also conform to this requirement;
- Equipped with GPS navigator, Radar, Echo Sounder, VHF radio and a suitable telephone as a minimum⁸;
- Have appropriate Employers Liability and Third Party Liability cover under the terms and conditions of their own vessel insurance.

⁸ Beyond waters close inshore and in shipping lanes, the radio equipment will be appropriate GMDSS equipment.

GLOSSARY AND ABBREVIATIONS

CEFAS	Centre for Environment Fisheries & Aquaculture Science
CFLO	Company Fishing Liaison Officer
COLREG	The International Regulations for Preventing Collisions at Sea
COWRIE	Collaborative Offshore Wind Research into the Environment
CPA	Coast Protection Act
DARDNI	Department of Agriculture and Rural Development, Northern Ireland
DETI	Department of Enterprise, Trade and Investment, Northern Ireland
DPS	Disturbance Payments Scheme
DECC	Department for Energy and Climate Change
EIA	Environmental Impact Assessment
FEPA	Food & Environment Protection Act
FIR	Fishing Industry Representative
FLO	Fisheries Liaison Officer – analogous to an FIR, a term used in the oil and gas industry
FLOWW	Fishing Liaison with Offshore Wind & Wet Renewables Group
FLR	Fisheries Liaison Representative
IFCA	Inshore Fisheries and Conservation Authorities
IFG	Inshore Fisheries Group
IMM	International Maritime Mobile
MCA	Maritime & Coastguard Agency
MF	Medium frequency
MHWS	Mean High Water Springs
MMO	Marine Management Organisation
MPS	Marine Policy Statement
MSL	Mean Sea Level
MS-LOT	Marine Scotland's Licensing Operations Team
NIEA	Northern Ireland Environment Agency
NOREL	Nautical & Offshore Renewables Energy Liaison
NFFO	National Federation of Fishermen's Organisations
OFTO	Offshore Transmission Owner
OREI	Offshore renewable energy installation
PNM	Preliminary Notice to Mariners
REA	Renewables Energy Association
SFF	Scottish Fishermen's Federation
SAGB	Shellfish Association of Great Britain
SOLAS	Safety of life at sea Convention
STA	Submarine Telegraph Act
UKHO	UK Hydrographic Office
VFLO	Volunteer Fisheries Liaison Officer
VHF	Very High Frequency
VTs	Vessel Traffic Service