



**Meeting:** Marine Scotland / Fishing Sector Focus Meeting

**Date/Time/Venue:** 9 September 2011  
13.00 – 16.00, Conf Rm 3, Victoria Quay  
Lunch 12.30

**Agenda**

1. Minutes and actions from last meeting
2. Offshore marine renewable energy
  - offshore wind and outline of process
  - marine renewables and outline of process
3. Marine Planning
4. Marine Protected Areas
5. Marine Strategy Framework Directive

## **Minutes of Marine Scotland / Fishing Focus Meeting – 09 September 2011**

Linda Rosborough welcomed attendees and reiterated the purpose of the meeting, including the opportunity it provides to discuss informally what is working, what isn't working as well and how we can work well in future.

### **1. Minutes and actions from the last meeting**

Nick Lake had some proposed amendments to the minutes of the meeting and agreed to supply these by email.

On action 3 [SFF to meet with developer as a precursor towards trilateral meetings with fishing sector, DG Energy and Marine Scotland offshore wind], Malcolm Morrison asked if MS can assist in scheduling a meeting and PG said a colleague was progressing arrangements.

All other actions were completed or covered by the agenda for the meeting.

### **2. Renewables**

Onshore subsidies have been cut as this industry is now well established. Offshore industry still in development and hence will continue to attract Government subsidy.

Plans will be revisited every 2 years. Consideration is being given on how to address socio-economic impacts on the fishing industry via sectoral plans.

#### **Q&A**

What valid grounds for objections do the fishing industry have?

- All Responses to a consultation are analysed and Ministers will be made aware of any impacts and objections during the decision making process.

How can we appeal against a decision?

- Ultimately by taking the decision to judicial review.

Why are developers getting the go ahead from the Crown Estate?

- Not many locations have consent to develop as yet. They have secured a lease from the Crown Estate. The Crown Estate can provide a lease for any part of the estate it is responsible for, but Marine Scotland is the marine planning and licensing authority and Scottish Ministers the decision makers. As such the power to include development proposals in relevant Plans and provide licenses rests with Scottish Ministers. Also, all marine plans and licence applications are subject to public consultation procedures. The Sound of Islay process had a full consultation process and all concerns were listened to.

There is nothing that says that the fishing industry's concerns will be heard?

- Phil Gilmour said he was happy to discuss this further via a bilateral. The sectoral plan will move Marine Scotland ahead of the Crown Estate in the whole process. There is potential for a win win situation if properly planned and managed.

What about the in-combination effects of offshore wind, marine renewables and aquaculture on the socio-economics of fisheries?

- No guarantee of a full study as applications are considered on an individual basis on differing timescales. The renewables industry has the potential to create a significant number of jobs in rural Scotland.

Do all applications look at merits, impacts etc before licensing is progressed?

- Marine Scotland will have a socio-economic report before the majority of licensing applications are considered.

The Crown Estate has jumped the gun and has created most of the concerns?

- Regional Locational Guidance will hopefully address all of these issues.

### **3. SCOTMAP**

Data collection now completed. Exceptional response from fishermen with almost 100% participation. Further analysis will now take place with the steering group expected to meet in November 2011. A review of the entire process will take place and a decision made about rolling out the process to other parts of the country.

We hope that this will stimulate early engagement with fisheries by the other sectors wishing to develop in the area. The Crown estate has indicated a willingness to adjust lease areas to minimise socio-economic impact on fisheries subject to the agreement of the developer.

#### **Q&A**

Will the roll-out be nationwide if going ahead?

- Yes, subject to resource implications. Areas where development is most likely will be prioritised.

#### **Issues**

How will export cabling be consented and the socio-economic impact assessed?

Marine Scotland clarified it is discussing strategic grid issues with SG colleagues base in Glasgow.

Pre-testing of floating structures not covered by the Marine (Scotland) Act or section 36 of the Electricity Act?

A licence is required for all structures from a navigation perspective.

#### **4. Marine Planning**

Pre-consultation draft of national marine plan being revised to incorporate views expressed during the consultation. The full consultation draft will be ready during 2012. This will have to go through both the Scottish and UK cabinet processes before the consultation will take place as we only have executive devolution beyond 12nm.

#### Q&A

Regional planning boundaries – Where are we with this?

- We will publish as soon as Ministers have approved them.

Will regional planning groups include the fishing industry?

- The Scottish Coastal Forum has been working to draft rules of engagement and how the process will work.
- It was noted that the Solway Firth Partnership has been successful in creating a code of conduct between static and scallop dredge interests which has reduced sectoral tensions.

#### Issues

Do sea urchin farming and algae farms require a marine licence?

Action: David Palmer agreed to look into this and provide relevant information.

#### **5. Marine Protected Areas**

The 2<sup>nd</sup> national stakeholder workshop to discuss Least Damaged More Natural (LDMN) had taken place on 8<sup>th</sup> June 2011. A significant amount of post workshop information received from fishing interests had resulted in a number of amendments to the LDMN data layer being made.

A programme of 15 surveys has been announced. 8 of these are being undertaken via a new partnership framework involving other public bodies such as the Northern Lighthouse Board. 12 of the surveys are focused on areas of specific biodiversity interest and 3 are opportunistic during down time on bottom trawl surveys.

Looking ahead the 3<sup>rd</sup> stakeholder workshop will bring together LDMN with the contribution of existing protected areas and other area-based measures.

## Q&A

Is there a definition of minimum standard of evidence?

- Will report on this at the next meeting.
- It was noted that the description of evidence and how you consider and judge the various sources together was the key element in the process. The variety of sources may make definition of a minimum standard difficult.

Can stakeholders challenge a decision?

- Yes they can challenge any proposal during the development stage via bilateral meetings or at the stakeholder workshops. There will also be the opportunity to participate in the public consultation. The Marine Act also allows for representations to be made before a designation decision is made. Finally a decision can be challenged via judicial review.

How will 3<sup>rd</sup> party proposals be considered?

- These will be tested against the same selection guidelines as any proposal brought forward by the nature conservation agencies. Any future management of nature conservation MPAs will be decided by Scottish Ministers irrespective of where the proposal came from. Sites will only be managed by restricting activities when required to protect the features.

It was noted that Patrick Stewart had made a significant contribution to the MPA process and everyone wished him a speedy recovery from ill health.

## **6. Marine Strategy Framework Directive**

This has reached a critical stage as we have to advise the European Commission of the initial status of our waters and how we will apply and achieve Good Environmental Status (GES). Environmental targets and indicators for the 11 descriptors are being finalised. Targets for a number of the descriptors will potentially have an impact on the fishing industry.

Aiming for a UK public consultation in early 2012, subject to various cabinet clearance processes. This will set out proposals for the initial assessment of the state of the seas; determining GES; and setting relevant targets and indicators.

The programme of measures to achieve GES has to be in place by 2015. Impact assessments will consider where we would be if we do nothing and different options for achieving GES with the associated costs and benefits. The current state of our seas will be derived from our Marine Atlas and Charting Progress 2.

It was noted that any target based on fish size could create issues for the industry. An example of this being when there is an exceptionally large year class for a species which then becomes a slow growing class due to competition for food.

Marine Scotland is working at UK, EU, and Oskar levels to come up with a coherent approach as the Commission will judge all member states.

Q&A

Any clarification of the interactions between MSFD and the Water Framework Directive?

- We are working with SEPA to ensure that there is no conflict. Stakeholder perspectives welcomed especially if they see conflict between the two.

## **7. Other Business**

It was suggested that there may be benefits in broadening out the membership of the group. SFF advised they were to discuss at next committee meeting and would reserve their view until after that

SFF stated that they were, on occasion, not getting much time to respond to consultations on licensing. One example was only getting 3 weeks notice for the Clyde subsea cable project.

Action: Marine Scotland to look into this and report back

Next meeting in January 2012.

## **Marine Scotland/Fishing Sector Focus Meeting Summary of Actions for Marine Scotland from 20 May 2011**

**Action 1:** Marine Scotland to produce minute of progress in advance of meetings to facilitate productive discussion

Paper produced by Marine Scotland and distributed with agenda for 9 Sept 2011

**Action 2:** Marine Scotland to outline processes undertaken in reaching renewable licensing decisions a) under current processes and b) illustrating how marine planning will influence licensing processes.

Paper produced by Marine Scotland and distributed with agenda for 9 Sept 2011

**Action 4.** Marine Scotland to clarify position of Merchant Shipping Act and other regulation on oil and gas industry regarding decommissioning

Paper produced by Marine Scotland and distributed with agenda for 9 Sept 2011

**Action 5:** Marine Scotland to distribute background paper on MSFD prepared for the Marine Strategy Forum.

Paper produced by Marine Scotland distributed with agenda for 9 Sept 2011

**Action 6:** Marine Scotland to provide information on timeline for the data collection pilot in Pentland Firth.

Paper produced by Marine Scotland distributed with agenda for 9 Sept 2011

**Action 7:** Marine Scotland to provide information on 2011/12 survey agenda, including a map of survey areas, when finalised.

<http://www.scotland.gov.uk/News/Releases/2011/08/12121316>

**Marine Scotland  
Aug 2011**

## **Marine Scotland/Fishing Sector focus meeting: 9 September 2011**

**Action 4.** Marine Scotland to clarify position of Merchant Shipping Act and other regulation on oil and gas industry regarding decommissioning

Paper produced by Marine Scotland and distributed with agenda

1. Merchant Shipping Act – Broadly, consideration is given where navigational marks and lights are required in respect of a development. If marks or lights are required in respect of a wind, wave or tidal stream energy deployment, a project-specific statutory sanction must be applied for from, and granted by, the General Lighthouse Authority which in Scottish waters is the Northern Lighthouse Board (NLB). Developers need to obtain Statutory Sanction after agreement has been reached with the NLB on the specific characteristics and placement of any marks. The award of Statutory Sanction is normally an internal process undertaken by the NLB, and does not routinely involve external consultation.
2. Decommissioning - Sections 105 to 114 of the Energy Act 2004 introduced a decommissioning scheme for offshore wind and marine energy installations. Under the terms of the Act, the Secretary of State may require a person who is responsible for one of these installations to submit (and eventually carry out) a decommissioning programme for them. This aspect of the process is directed by the Department of Energy and Climate Change (DECC), Marine Scotland will be consulted on the decommissioning plan (s). Further information can be found at ([https://www.og.decc.gov.uk/EIP/pages/files/orei\\_guide.pdf](https://www.og.decc.gov.uk/EIP/pages/files/orei_guide.pdf)).
3. Oil and Gas Industry Legislation regarding decommissioning – Broadly because the renewable developments have their own specific requirements there may be links on a case by case basis but the oil and gas legislation has, I believe, no direct legal bearing. However, the same international obligations that apply to oil and gas will generally I think be applied to the renewable industry. They have their origins in the United Nations Convention on the Law of the Sea (UNCLOS), 1982. This requires abandoned or disused installations or structures to be removed, to ensure safety of navigation, taking into account generally accepted international standards. International Maritime Organization (IMO) standards were adopted in 1989. Relevant work has also been undertaken under the OSPAR Convention, which guides international cooperation on the protection of the marine environment of the North-East Atlantic. OSPAR. Decision 98/34 sets out binding requirements for the disposal of disused offshore oil and gas installations. Whilst there is no equivalent Decision for offshore renewable energy installations, OSPAR has produced guidance documents on offshore wind farms, incorporating ideas on their decommissioning.

**Marine Scotland  
Aug 2011**

## **Marine Scotland/Fishing Sector focus meeting: 9 September 2011**

**Action 6:** Marine Scotland to provide information on timeline for the data collection pilot in Pentland Firth.

The inshore fishing study is up and running in the Pentland Firth and Orkney Waters area. The fisheries officers based in Kirkwall and Scrabster have been gathering data and are aiming to complete this process by the end of August. The response from fishermen has been positive; nearly all have been willing to take part in this study.

The steering group overseeing this pilot met in July to discuss progress on data gathering and the future analysis of the data. The group will meet again in the Autumn to consider the key outputs of the data analysis. Fiona Matheson has replaced Alan Coghill as representative of OFA on this group.

This pilot has been extended to Luce Bay to inform management of this area, and the data gathering in this area will be carried out by the Solway Firth Partnership.

After the evaluation of the methodology, the study will be extended to other locations of interest for renewables policy, planning, conservation and fisheries management , in discussion with the fishing sector.

FAL has now agreed to sign the data protocol (which allows all signatories access to the anonymised data collected in this study). All signatories to be emailed separately to inform them of this and to give them an update about the study.

## **Sectoral Marine Plan for Wave & Tidal Energy (work in progress)**

1. The development of a wave and tidal energy plan will facilitate and accelerate the establishment of this sector by addressing key strategic issues at an early stage within the marine planning process
  - 1.1 The Scottish Government is developing a *Sectoral Marine Plan for Wave & Tidal Energy in Scottish Renewable Energy Zone*
  - 1.2 In 2007, a Strategic Environmental Assessment (SEA) of marine renewables was published, which provided a strategic overview of wave and tidal energy development potential. Since then, Marine Scotland has applied marine planning technique to facilitate The Saltire Prize and to cover the Pentland Firth and Orkney Waters strategic area. This has involved the production of a Scoping Report to identify the main resources and constraints and the provision of Regional Locational Guidance to provide finer scale information on environmental sensitivities and other sectoral constraints to facilitate site selection for wave and tidal energy developments in the most appropriate locations. The development of a Sectoral Marine Plan for Wave & Tidal Energy in Scotland's Renewable Energy Zone will further serve to provide a strategic plan for wave & tidal energy development.
  - 1.3 The Plan will be developed through the application of the following Strategic Plan Making 'Tools':
    - Sustainability Appraisal
      - *Strategic Environmental Assessment;*
      - *Habitats Regulation Appraisal*
      - *Socio-economic Assessment;*
    - Consultation Analysis.
  - 1.4 The key findings from the HRA, SEA & Socio-economic Assessment will inform the development of the Draft Plan. The outcomes and key findings of Scoping and Regional Locational Guidance will underpin Plan option selection to inform the Draft Plan. The Draft Plan will draw upon the following:
    - The Pentland Firth Regional Locational Guidance for Marine Energy
    - The Saltire Prize Programme; Further Scottish Leasing Round Scoping Study.
    - Further Scottish Leasing Round The Saltire Prize (Projects) Regional Locational Guidance
    - Further Scoping Study to cover the rest of Scottish Waters (0 to 200 nm).
    - Regional Locational Guidance for Marine Energy to cover Scottish Waters.
  - 1.5 The Draft Plan will be subject to statutory consultation with the public and stakeholders for a minimum period of 16 weeks.

### Final Draft Plan

- 1.6 The key findings and recommendations arising from the HRA, SEA & Socio-economic Assessment and Consultation Analysis will inform the development of the Final Draft Plan.

### Scottish Ministers' Approval

- 1.7 The Final Draft Plan will be put before Scottish Ministers for comment and/or approval.

### Adopted Plan

- 1.8 The Adopted Plan will contain the following for wave and tidal energy generation at the strategic level within Scotland's Renewable Energy Zone:

- Scottish Ministers' Adopted Options for development
- Scottish Ministers' Adopted Further Areas of Search

### Post-Adoption Statement

- 1.9 A Post-Adoption Statement is a requirement of the Environment Assessment (Scotland) Act 2005. The Statement outlines the reasons for choosing the Plan as adopted and details how environmental considerations have been incorporated into the Adopted Plan. It also contains a record of consultation responses and the subsequent actions taken in the plan development process as a result of these.
- 1.10 The Post Adoption Statement for the Sectoral Marine Plan for Wave & Tidal Energy will detail how considerations of the findings from the SEA, HRA and Socio-economic Assessment have been taken into account in the development of the Plan.

**Marine Scotland  
August 2011**

## **SECTORAL MARINE PLAN FOR OFFSHORE WIND ENERGY – 30/7/11**

### **Plan Development**

1. In 2009, the Crown Estate Commissioners (CEC) undertook the first stage of lease bidding and awarded Exclusivity Agreement awards (the first step towards securing a commercial lease) for 10 sites in Scottish Territorial Waters:
  - Solway Firth
  - Wigtown Bay
  - Kintyre
  - Islay
  - Argyll Array
  - Beatrice
  - Inch Cape
  - Neart na Gaoithe
  - Forth Array, and
  - Bell Rock
2. In response to the CEC leasing round and to support the sustainable delivery of the potential for offshore wind around Scotland, the Scottish Government made a commitment to produce a Strategic Environmental Assessment (SEA) of the potential for offshore wind development in Scottish Territorial Waters, to include the 10 site options. A draft Plan was developed to accompany the SEA Environment Report, and thereby ensure that those reviewing the assessment findings during statutory consultation were clear about the emerging proposals.
3. In addition to the short term sites identified by CEC, the Scottish Government used consultants to undertake constraint and opportunity mapping in order to identify further medium term options, within which there could be further potential for development beyond 2020. The CEC marine spatial planning model, Marine Resource System (MaRS), was used to identify options, by mapping environmental and technical constraints as well as resource opportunities. 30 medium term options (areas of search) were identified. The 30 medium term options were then subject to environmental assessment, using the strategic environmental objectives developed with the Consultation Authorities. 5 options were ruled out. As a result, 25 medium term options (areas of search) were taken forward in the Sectoral Marine Plan.
4. Further to SEA, Habitats Regulations Appraisal (HRA) for the site and medium term options as well as a Socio-economic Assessment for the regional implications of the site options were commissioned. An Analysis Report of all the Consultation Responses as a result of the SEA and Plan development process was produced.
5. Prior to the publication of the Sectoral Marine Plan, the respective developers decided against progressing with Kintyre and Bell Rock sites following further site investigations and stakeholder engagement. In addition, the developer for

the Forth Array site decided to withdraw from their exclusivity agreement with the CEC.

6. In March 2011, the Cabinet was presented with key findings from the SEA, HRA, Socio-economic Assessment and Consultation Analysis. It was decided that 6 short term sites would be progressed.
  - Islay
  - Argyll Array
  - Beatrice
  - Inch Cape
  - Neart na Gaoithe
  - Forth Array
7. The short term options at Solway Firth and Wigtown Bay, as well at Kintyre, were not considered appropriate to progress the development of offshore wind energy. The significant strategic issues in relation to these sites were public acceptability, environmental and visual impact. In addition, socio-economic assessment suggested that there is little or no potential for regional economic benefit, and indeed that there is a possibility of adverse economic impacts. It should also be noted that the CEC have since announced that Forth Array will no longer be considered appropriate for lease and have withdrawn the availability of this site.

#### **Further Leasing Opportunities in Scottish Territorial Waters**

8. Since publication of the Sectoral Marine Plan which was restricted to the 12 nautical mile Scottish Territorial Waters (STWs) limit, the Scottish Government has been undertaking a scoping exercise to seek to explore the 25 remaining medium term options (areas of search) further, initially through sensitivity testing using the MaRS model. The Scottish Government is also examining the potential to identify further Plan options beyond STWs out to the 200 nautical mile Renewable Energy Zone limit. The Scottish Government will apply further more detailed marine planning techniques, including regional locational guidance, to steer Plan option development, to facilitate future lease bidding and help with the licensing stage.

#### **Sectoral Marine Plan for Offshore Wind Energy Review**

9. The Plan will be reviewed over a 2 year period. The Scottish Government will expand the scope of the Plan beyond STWs out to the 200 nautical mile Renewable Energy Zone limit. The outcomes of the Key Actions (Section A.12 of the current Sectoral Marine Plan) will feed into the review process. Any options or areas of search arising from the Scoping exercise, Regional Location Guidance or any future leasing round, which are contained in the review will be subject to SEA, Socio-economic Assessment and HRA.

# RENEWABLE CONSENTING PROCESS – APRIL 2011

Marine Scotland Front Door  
 ms.marinelicensing@scotland.gsi.gov.uk  
 01224 295579

All applications for consents/licences under Marine Licence, s.36 and European Protected Species (EPS)

Entry point and screening process

Pre-screening Process Baseline Surveys

Guidance and Advice from both Government and Non-government consultees

Consultation including public participation

Screening Document (if required)

If applying for a s.36 consent an Environmental Impact Assessment (EIA) is required

Consultations and Advice

Range of Government and Non-government consultees (Formal Process)

EIA Scoping Document

Consultation including public participation

Government and Non-government Consultations

Marine Scotland distributes to consultees as defined by EIA regulations (Formal Process)

Full Documentation

Environmental Statement, Navigational Risk Assessment, Third Party Verification

Prepare and submit application forms and supporting documentation to Marine Scotland.

Apply for all consents Marine Licence, s.36 and EPS

Consultation including public participation

Application processing includes: internal and external consultation, assessment of comments and objections, licence conditions defined (including monitoring and reporting requirements)

Marine Scotland will maintain communication with the applicant/ developer

Application Process Typically 9 Months

Marine Licence and S36 Consents/Licences determined then issued by Marine Scotland. Decommissioning Plan Approved by DECC

- Developer
- Regulators
- Both

**MARINE SCOTLAND LICENSING OPERATIONS TEAM**  
**MARINE RENEWABLE ENERGY (INCLUDING WIND) LICENSING**  
**CONSIDERATION AND DECISION MAKING PROCESS**

**S36, European Protected Species and Marine Licence**

The following summarises the key steps lying behind the licensing and consenting process shown in the attached flow diagram.

The process is described in greater detail in the Marine Renewable Licensing Manual which can be found at (<http://www.scotland.gov.uk/Topics/marine/Licensing/marine>).

**Purpose**

To summarise the key steps undertaken to process applications under section 36 of the Electricity Act 1989, The Conservation (Natural Habitats, &c) Regulations 1994 (as amended) (the 1994 Regulations) and Marine (Scotland) Act 2010.

**Scope**

The process starts with an initial enquiry and ends with a recommendation to the Minister and if positive signing off conditions on consents and licences including monitoring and mitigation plans.

**Inputs**

Enquiries including how to prepare applications (including data gathering and analysis) and undertake public engagement exercises, facilitation of discussions between stakeholders, representations, feedback from advisors and stakeholders and consultation responses.

**Outputs**

Feedback from facilitators meetings, stakeholder and public engagement, advice on surveys and data gathering, scoping and screening opinions, Habitats Regulation Assessments (Appropriate Assessments), consent determinations and documents, decision letters, finalising of plans and conditions and website updates.

**Controls**

Various legislation as outlined in part 2 of the Marine Renewable Licensing Manual and internal guidelines.

Factors taken into account when making a decision

Part 3 of the Marine Renewable Licensing Manual outlines the key factors that are taken into account which are broadly driven by the Environmental Impact Assessment (EIA) and Habitats Regulations Appraisal (HRA) processes. The Environmental Statement is the basis of the application made to Marine Scotland.

**Marine Scotland Licensing Operations Team**  
**Marine Scotland**  
**August 2011**

**MARINE STRATEGY FRAMEWORK DIRECTIVE**

**Background**

The aim of the European Union's Marine Strategy Framework Directive (MSFD) is to protect the marine environment across Europe more effectively and to put measures in place to achieve Good Environmental Status (GES) by 2020. The MSFD establishes European marine regions on the basis of geographical and environmental criteria, with each Member State obliged to co-operate with other Member States and non-EU countries within a marine region in developing their own Marine Strategy. The relevant regions for UK waters are the Celtic Sea and the Greater North Sea. Regional co-ordination is being taken forward via OSPAR.

Each Marine Strategy consists of:

- Initial assessment of the marine waters
- Determination of the characteristics of GES for each of the 11 Descriptors set out in the Directive
- Environmental Targets and Indicators
- Programme for monitoring environmental status
- Programme of measures necessary to achieve or maintain GES.

The first three aspects (initial assessment, determination of GES and targets and indicators) must be notified to the European Commission by July 2012. The deadline for the monitoring programme is 2014 and the programme of measures are to be devised by 2015 and operational by 2016.

The MSFD has been transposed into UK domestic legislation by The Marine Strategy Regulations 2010<sup>1</sup>. These set out that Scottish Ministers are the competent authority for the Directive out to 200 nautical miles. They also set out the framework of co-operation and consent that exists between the UK administrations in terms developing a UK-wide Marine Strategy. From a Scottish perspective, this can be summarised as follows:

- Each element of the Marine Strategy will be formally submitted by UK Ministers, the elements due by 2012 will be led by the UK with strong input from Scottish Ministers (in practice this means Scottish policy makers, scientists and stakeholders will also play a strong role). Scottish Ministers will take the lead in developing a monitoring programme and establishing and reviewing the programme of measures for Scottish waters.
- Each UK Administration has a duty to co-ordinate activity to ensure consistency in developing a Marine Strategy.
- The UK Government must obtain the consent of Scottish Ministers before adopting any element of the Strategy which affects or is likely to affect the

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<sup>1</sup> <http://www.legislation.gov.uk/ukxi/2010/1627/contents/made>

exercise of any devolved function. Such consent must also be sought when exercising functions for the purpose of implementing the Directive.

- Scottish Ministers must seek the consent of the relevant UK Minister if making any proposals which affect or are likely to affect reserved functions. Such consent must also be sought when exercising functions for the purpose of implementing the Directive.
- Scottish Ministers must co-operate in exercising any relevant function to implement the strategy. UK Ministers must do likewise.

### **Current progress**

Progress to implement the Directive is taking place on a number of fronts, all of which are relevant to Scottish waters.

#### European

A Common Implementation Strategy is in place at the European level – the framework is set out at Annex 1. This was previously focussed on informing the Commission's decision on criteria and methodologies on GES, which was finalised in September 2010<sup>2</sup> and is binding on future work at member state level. The Working Group on Economic and Social Analysis has recently finalised guidance on the economic and social aspects of the Initial Assessment. Relevant activity expected in the near future includes:

- Working Group on GES guidance on determining GES and setting targets and indicators
- Commission workshop on the Initial Assessment in May
- Renewed focus on data and information through Working Group – Data, Information and Knowledge Exchange

#### Regional

Regional co-ordination is being taken forward through OSPAR. The way in which the MSFD is being considered within the OSPAR structure is set out in the diagram at Annex 2. The various groups are currently working on developing advice documents on targets and indicators.

#### UK

There are close working relationships between policy makers and scientists across the UK in taking forward the early development of the Marine Strategy. This is co-ordinated by a UK wide policy steering group and also through the UK Marine Monitoring and Assessment Strategy (UKMMAS) community. A diagram detailing UKMMAS handling of the GES descriptors and associated target and indicator development is at Annex 3.

The policy steering group and the Marine Assessment and Reporting Group (MARG) with UKMMAS have agreed the UK's approach to the Initial Assessment. This will consist of a cover paper supporting a set of

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<sup>2</sup> <http://ec.europa.eu/environment/water/marine/ges.htm>

underpinning evidence. The main component of the underpinning evidence base will be Charting Progress 2 (CP2)<sup>3</sup> and Scotland's Marine Atlas<sup>4</sup> will also be covered. UKMMAS groups have been invited to identify any new evidence which should be included. The scale of the assessment will be at the sub-regional level (i.e. Celtic Seas/Greater North Sea) although issues that are of particular significance at smaller scales may be mentioned where there is a difference from the overall assessment for the sub-region.

Work on developing determinations of GES and associated targets and indicators is also underway. Much of the technical development is being taken forward via two projects – one led by CEFAS and focusing on Descriptors 2,3,5,7,8,9, 10 and 11; and one led by JNCC and focussing on Descriptors 1,4 and 6. Marine Scotland Science have been very involved in much of this work, which is also being discussed through the UKMMAS groups.

Current drafts of the proposals for determinations of GES and associated targets and indicators are included at Annex 4 (set alongside the relevant coverage from the Commission Decision referred to above). Please note that these represent work in progress and are provided as the basis for discussion.

### Stakeholder feedback

There was a stakeholder focussed seminar relating to this work on 8 February but this was not well attended by Scottish specific organisations. The main outcomes of this workshop can be summarised as follows:

- The question of scale was highlighted as a crucial issue, particularly with regard to achieving or failing to reach Good Environmental Status (GES). How far failure in a small geographical area represented a wider failure to achieve GES was discussed at length. Some pressures were identified as best being managed at a regional or international seas level, for instance non-native species. The importance of work underway within OSPAR and the EU in order to reach a common understanding and approach to descriptors was underlined.
- There was concern with several descriptors that a lack of evidence base made target setting very difficult, and potentially might even lead to 'moving goalposts' as more evidence became available. Determining a baseline for several descriptors such as noise and sea floor integrity was also seen as highly problematic.
- The need for variety in the form of different types of targets, whether qualitative/quantitative, pressure-based, state-based or linked to management measures was identified.

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<sup>3</sup> <http://chartingprogress.defra.gov.uk/>

<sup>4</sup> [www.scotland.gov.uk/marineatlas](http://www.scotland.gov.uk/marineatlas)

- The importance of considering natural variability was highlighted as in some areas it might well be a greater factor than man-made pressures. In addition temporal considerations were mentioned, essentially that resilient ecosystems may be able to recover from damage, and that the concept of eco-system resilience should be more prominent.
- Certain suggested targets were deemed insufficiently aspirational, particularly trend-based targets. Good Environmental Status (GES) is not intended to be the status quo and it was felt this should be reflected more strongly in some of the targets. A few targets were deemed insufficiently robust in terms of scientific evidence, for instance the link between litter items and sewage related illnesses.
- A lack of clarity of specific terms used throughout the document was identified, for instance the precise definitions of 'significant', 'prevailing conditions' or 'overall fisheries level'. This lack of clarity creates legal vulnerability, and potentially leads to clarity being undesirably established through the courts.
- Links between MSFD and other Directives/policies such as the Water Framework Directive, reform of the Common Fisheries Policy, and marine protected areas/marine conservation zones were discussed. It was felt that there were many lessons to be learnt from the Water Framework Directive in particular, although MSFD obviously applies to a much larger spatial area. All parties were keen to ensure policy coherency, for instance with industry in particular keen to ensure that the definitions of 'significant' environmental impacts under MSFD linked up with definitions of 'significant' Environmental Impact Assessments or the Habitats Directive.
- Finally it is important to note that there were a number of areas where common consensus could not be established, demonstrating the wide variety of stakeholders present, for instance on the utility of the Maximum Sustainable Yield (MSY) concept for Descriptor 3. Some stakeholders questioned the utility of the Directive at all. These, sometimes irreconcilable differences in opinion, will prove challenging to deal with in future as implementation progresses.

Further technical workshops are planned for 25 March and late May. If you would be interested in attending these, please contact Anna Donald ([anna.donald@scotland.gsi.gov.uk](mailto:anna.donald@scotland.gsi.gov.uk)) in the first instance.

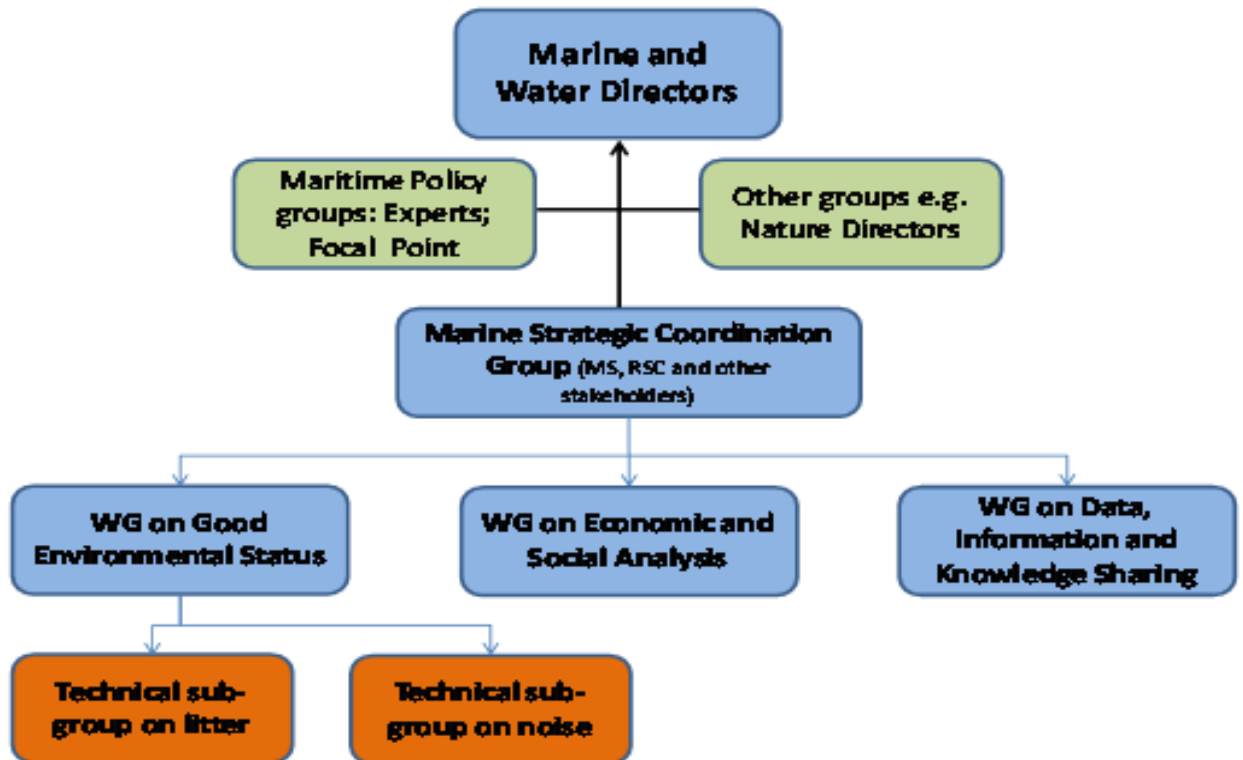
## **Discussion**

Forum members are asked to note the ongoing work and to provide their views on key issues for their own sectors and more generally. These could relate to the current process for implementation or specific aspects of the work being taken forward (such as current drafting of GES determination, targets and indicators). It would also be helpful to have members' views as to

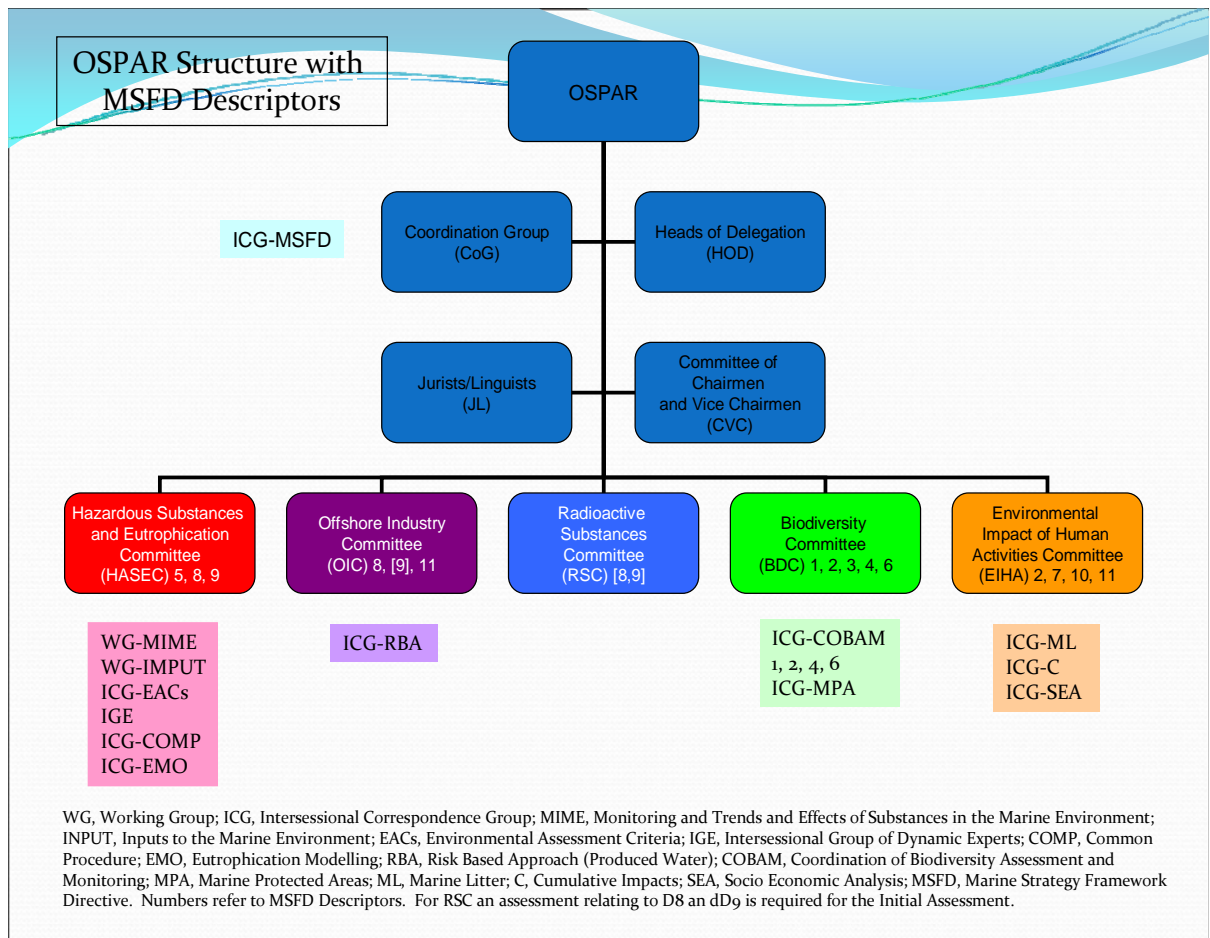
the most effective form of stakeholder engagement on implementation – bearing in mind there will be a public consultation exercise in relation to all 3 aspects of the Strategy which are due for 2012 beginning this Winter.

**Marine Scotland – Planning and Policy  
March 2011**

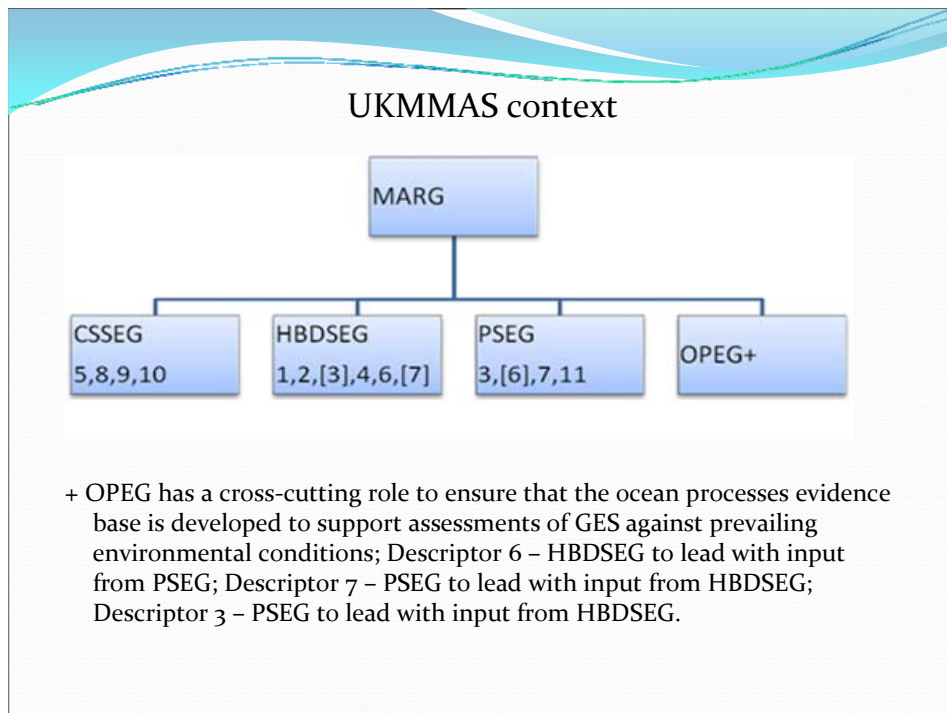
ANNEX 1 – EUROPEAN COMMON IMPLEMENTATION STRATEGY



## ANNEX 2:



## ANNEX 3:



## ANNEX 4: CURRENT DRAFTS OF DETERMINATION OF GES, TARGETS AND INDICATORS

### DESCRIPTOR 1: BIODIVERSITY

Commission criteria	Draft determination of GES characteristics	Commission Indicator	Possible targets
<b>1.1. Species Distribution</b>	<i>GES for Descriptor 1 Biodiversity will be achieved when:  The extent and distribution of habitats in UK waters reflects, or is consistent with, prevailing conditions.</i>	• <i>Distributional range (1.1.1)</i>	<i>No specific targets proposed at present</i>
		• <i>Distributional pattern within the latter, where appropriate (1.1.2)</i>	
		• <i>Area covered by the species (for sessile/benthic species) (1.1.3)</i>	
<b>1.2 Population size</b>	<i>Habitats in UK waters support the full range of functional species groups.  Diversity within functional species groups is maintained (in order to protect the function)</i>	• <i>Population abundance and/or biomass, as appropriate (1.2.1)</i>	
<b>1.3 Population condition</b>	<i>Viable species populations are maintained for highly mobile species<sup>5</sup>  Recovery/ improvement of biodiversity components is identified</i>	• <i>Population demographic characteristics (e.g. body size, or age class structure, sex, ratio, fecundity rates, survival/mortality rates) (1.3.1)</i>	
		• <i>Population genetic structure, where appropriate (1.3.2)</i>	
<b>1.4 Habitat distribution</b>	<i>Rare and threatened habitats included in existing legislation are protected to the level envisaged by that legislation.</i>	• <i>Distributional range (1.4.1)</i>	
		• <i>Distributional pattern (1.4.2)</i>	
<b>1.5 Habitat extent</b>		• <i>Habitat area (1.5.1)</i>	
		• <i>Habitat volume, where relevant (1.5.2)</i>	
<b>1.6 Habitat Condition</b>		• <i>Condition of typical species and communities (1.6.1)</i>	
		• <i>Relative abundance and/or biomass, as appropriate (1.6.2)</i>	
		• <i>Physical, hydrological and chemical conditions (1.6.3)</i>	
<b>1.7 Ecosystem structure</b>		• <i>Composition and relative proportions of ecosystem components (habitats and species) (1.7.1)</i>	

<sup>5</sup> However it should be recognised that these species may be affected by anthropogenic activities outside EU waters

## DESCRIPTOR 2: NON-INDIGENOUS SPECIES

Commission Criteria	Draft Determination of GES Characteristics	Commission Indicator	Possible Targets
<b>2.1 Abundance and state characterisation of non-indigenous species, in particular invasive species</b>	<p><i>GES for Non-indigenous species in UK waters will be achieved when:</i></p> <p><i>The risk from pathways and vectors which facilitate the spread of NIS as a result of human activities have been significantly reduced.</i></p> <p><i>The impact from IAS on key functional groups OR native species populations has been reduced.</i></p>	<p><i>Trends in abundance, temporal occurrence and spatial distribution in the wild of non-indigenous species, particularly invasive non indigenous species, notably in risk areas, in relation to the main vectors and pathways of spreading of such species (2.1.1)</i></p>	<p><i>Reduction in the risk from key pathways / vectors of introduction of NIS</i></p> <p><i>Reduction in risk of human-mediated spread</i></p> <p><i>Reduction in the incidence of [severely] fouled ship hulls</i></p> <p><i>Trend analysis showing measurable reduction in number of new establishments of IAS</i></p>
	<p><i>The spread of IAS has been reduced over time.</i></p>		

### DESCRIPTOR 3: COMMERCIAL FISH

Commission Criteria	Draft Determination of GES Characteristics	Commission Indicator	Possible Targets
3.1 Level of pressure of the fishing activity	<p><i>GES for commercially exploited fish and shellfish will be achieved when:</i></p> <p><i>All commercial fish species in UK waters are fished sustainably, consistent with a Maximum Sustainable Yield (MSY) approach.</i></p> <p><i>Populations of all commercially exploited fish and shellfish are within safe biological limits, exhibiting a population age and size distribution that is indicative of a healthy stock.</i></p>	<ul style="list-style-type: none"> <li>• <i>Primary indicator – Fishing Mortality (F) (3.1.1)</i></li> </ul>	<p><i>Commercial stocks managed through the CFP are managed in a way that is consistent with MSY and MSY is achieved at the level of the overall fishery</i></p>
		<ul style="list-style-type: none"> <li>• <i>Secondary indicator (only if primary indicator is not available) – Ratio between catch and biomass index (3.1.2)</i></li> </ul>	
3.2 Reproductive capacity of the stock		<ul style="list-style-type: none"> <li>• <i>Primary indicator – Spawning Stock Biomass (3.2.1)</i></li> </ul>	<p><i>[x%] of stocks fished at the precautionary level – Fishing Mortality (F) per annum and Spawning Stock Biomass (SSB) per annum</i></p> <p><i>[x%] increase trend in the number of stocks at safe biological limits consistent with moving towards achieving MSY at the level of the overall fishery</i></p> <p><i>Non CFP fish and shellfish stocks are being managed sustainably</i></p>
		<ul style="list-style-type: none"> <li>• <i>Secondary indicator (only if primary indicator is not available) Biomass indices (3.2.2)</i></li> </ul>	
3.3 Population age and size distribution		<ul style="list-style-type: none"> <li>• <i>Proportions of fish larger than the mean size of first sexual maturation (3.3.1)</i></li> </ul>	<p><i>Over 30% of finfish (by weight) should be greater than 40cm in length (or 30cm in North Sea) (OSPAR EcQO) taking into account individual species lengths for larger species.</i></p>
		<ul style="list-style-type: none"> <li>• <i>Mean maximum length across all species found in research vessel surveys (3.3.2)</i></li> </ul>	
		<ul style="list-style-type: none"> <li>• <i>95% percentile of the fish length distribution observed in research vessel surveys (3.3.3)</i></li> </ul>	
		<ul style="list-style-type: none"> <li>• <i>Secondary indicator: Size of first maturation, which may reflect the extent of undesirable genetic effects of exploitation (3.3.4)</i></li> </ul>	

## DESCRIPTOR 4: FOODWEBS

Commission Criteria	Draft Determination of GES Characteristics	Commission Indicator	Possible Targets
<p><b>4.1. Productivity (production per unit biomass) of key species or trophic groups</b></p>	<p><i>GES for Descriptor 4 – Good status for this Descriptor will be achieved when:</i></p> <p><i>The structure and function of key species groups are maintained at the various trophic levels.</i></p> <p><i>The energy transfer is sufficient to maintain trophic levels given prevailing conditions.</i></p>	<p><i>Performance of key predator species using their production per unit biomass (productivity) (4.1.1)</i></p>	<p><i>Taking into account natural population dynamics and trends, there should be no decline in harbour seal population size (as measured by numbers hauled out) of <math>\geq 10\%</math> as represented in a five-year running mean or point estimates (separate by up to five years) within any of eleven sub-units of the North Sea (OSPAR EcoQO)</i></p> <p><i>Taking into account natural population dynamics and trends, there should be no decline in pup production of grey seals of <math>\geq 10\%</math> as represented in a five-year running mean or point estimates (separate by up to five years) within any of nine sub-units of the North Sea (OSPAR EcoQO)</i></p> <p><i>Breeding success of the black-legged kittiwake (<i>Rissa tridactyla</i>) should exceed (as a three-year running mean) 0.6 chicks per nest per year in each of the following coastal segments: Shetlands, north Scotland, east Scotland, and east England (OSPAR EcoQO)</i></p>
<p><b>4.2 Proportion of selected species at the top of food webs</b></p>		<p><i>Large fish (by weight) (4.2.1)</i></p>	<p><i>Over 30% (or 40% depending on region) of fish (by weight) should be greater than 40cm in length (OSPAR EcoQO) taking into account individual species lengths for larger species.</i></p> <p><i>Targets for D3 may also be relevant here.</i></p>
<p><b>4.3 Abundance/distribution of key trophic groups/species</b></p>		<p><i>Abundance trends of functionally important selected groups/species (4.3.1)</i></p>	<p><i>Taking into account natural population dynamics and trends, there should be no decline in harbour seal population size (as measured by numbers hauled out) of <math>\geq 10\%</math> as represented in a five-year running mean or point estimates (separate by up to five years) within any of eleven sub-units of the North Sea (OSPAR EcoQO)</i></p> <p><i>Taking into account natural population dynamics and trends, there should be no decline in pup production of grey seals of <math>\geq 10\%</math> as represented in a five-year running mean or point estimates (separate by up to five years) within any of nine sub-units of the North Sea (OSPAR EcoQO)</i></p>

			<p><i>Annual by-catch of harbour porpoises should be reduced to levels below 1.7% of the best population estimates (OSPAR EcoQO)</i></p> <p><i>Targets for D3 may also be relevant here</i></p>
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**Descriptor 5 - Human-induced eutrophication is minimised, especially adverse effects thereof, such as losses in biodiversity, ecosystem degradation, harmful algae blooms, and oxygen deficiency in bottom waters.**

**Summary Table**

Criteria	Draft determination of GES Characteristics	Commission Indicator	Possible Targets
5.1 Nutrients levels	<i>GES, and thus the minimisation of eutrophication, in UK waters will be achieved when:</i>  <i>Undesirable disturbances associated with anthropogenic nutrient enrichment including excessive algal blooms, low dissolved oxygen, and declines in biodiversity, are minimised in the marine environment.</i>	<ul style="list-style-type: none"> <li>• <i>Nutrients concentration in the water column (5.1.1)</i></li> </ul>	<ul style="list-style-type: none"> <li>• <i>Dissolved inorganic nitrate and phosphorous do not deviate more than 50% from a salinity related, area-specific background<sup>6</sup>.</i></li> <li>• <i>Nutrient concentrations do not exceed levels established so as to ensure the functioning of the ecosystem and the achievement of the values for the biological quality elements.</i></li> </ul>
		<ul style="list-style-type: none"> <li>• <i>Nutrient ratios (silica, nitrogen and phosphorus), where appropriate (5.1.2)</i></li> </ul>	<ul style="list-style-type: none"> <li>• <i>No significant deviation (&gt;50%) from Redfield ratio of nutrients based on annual winter nutrient concentrations<sup>7</sup>.</i></li> </ul>
5.2 Direct effects of nutrient enrichment	<i>Biological communities remain well-balanced and retain all necessary functions to support ecosystem integrity and the sustainable use of the marine environment, in light of any anthropogenic nutrient enrichment.</i>  <i>Point and non-point source nutrient inputs into the estuarine and marine environments are at levels where human induced eutrophication does not occur at a</i>	<ul style="list-style-type: none"> <li>• <i>Chlorophyll concentration in the water column (5.2.1)</i></li> </ul>	<ul style="list-style-type: none"> <li>• <i>Maximum and mean chlorophyll concentrations during the growing season do not deviate more than 50% from an area specific justified background.<sup>8</sup></i></li> </ul>
		<ul style="list-style-type: none"> <li>• <i>Water transparency related to increase in suspended algae, where relevant (5.2.2)</i></li> </ul>	<ul style="list-style-type: none"> <li>• <i>Not applicable</i></li> </ul>
		<ul style="list-style-type: none"> <li>• <i>Abundance of opportunistic macroalgae (5.2.3)</i></li> </ul>	<ul style="list-style-type: none"> <li>• <i>Trend analysis shows no significant shifts from long-lived opportunistic species attributable to human induced eutrophication<sup>9</sup>.</i></li> </ul>
		<ul style="list-style-type: none"> <li>• <i>Species shift in floristic composition such</i></li> </ul>	<ul style="list-style-type: none"> <li>• <i>Phytoplankton index assessment exceedence counts for less than 25% of</i></li> </ul>

<sup>6</sup> Common Procedure for the Identification of the Eutrophication Status of OSPAR Maritime Area Winter DIN thresholds.

Criteria	Draft determination of GES Characteristics	Commission Indicator	Possible Targets
	<p><i>regional sea scale.</i></p> <p><i>Algal blooms resulting from anthropogenic nutrient enrichment do not pose significant risks for human health, safety, and enjoyment of the marine environment.</i></p>	<p><i>as diatom to flagellate ratio, benthic to pelagic shifts, as well as bloom events of nuisance/toxic algal blooms (e.g. cyanobacteria) caused by human activities (5.2.4)</i></p>	<p><i>all sampling times over 5 years<sup>10</sup>.</i></p> <ul style="list-style-type: none"> <li>• <i>No increase in the frequency, duration and spatial extent of occurrences of nuisance and harmful algal blooms.</i></li> </ul>

<sup>7</sup> Common Procedure for the Identification of the Eutrophication Status of OSPAR Maritime Area Winter DIN thresholds.

<sup>8</sup> OSPAR EcoQO/Procedure for the Identification of the Eutrophication Status of the OSPAR Maritime Area thresholds 15µg l<sup>-1</sup> (Estuarine), 15µg l<sup>-1</sup> (Coastal), 10µg l<sup>-1</sup> (Offshore).

<sup>9</sup> Common Procedure for the Identification of the Eutrophication Status of the OSPAR Maritime Area

<sup>10</sup> Phytoplankton index approach based on; total cell count, *Phaeocystis* cell count and chlorophyll

## DESCRIPTOR 6: SEAFLOOR INTEGRITY

Commission Criteria	Draft Determination of GES Characteristics	Commission Indicator	Possible Targets
6.1 Physical damage, having regard to substrate characteristics	<p><i>GES for sea-floor integrity in UK waters will be achieved when:</i></p> <p><i>The sea-floor habitats (physically and structurally) are productive and diverse</i></p> <p><i>Each habitat contains fauna and flora taxa sensitive to human pressure, at the levels of UK seas</i></p>	<ul style="list-style-type: none"> <li>• <i>Type, abundance, biomass and areal extent of relevant biogenic substrate (6.1.1)</i></li> </ul>	<p><i>[X%] of marine habitats not impacted at all</i></p>
	6.2 Condition of benthic community	<p><i>Taking into account prevailing conditions, the structure and function of benthic communities is consistent with the long-term maintenance of those communities at the level of the NE Atlantic/UK waters.</i></p> <p><i>Physical disturbance of the seafloor is minimised, taking account of relative sensitivity of habitats and connectivity between them at a subregional scale.</i></p> <p><i>Sea floor habitats continue to provide ecological services (cycling carbon/nutrients) and ecological function (food, refuge and reproduction).</i></p>	<ul style="list-style-type: none"> <li>• <i>Extent of the seabed significantly affected by human activities for the different substrate types (6.1.2)</i></li> </ul>
<ul style="list-style-type: none"> <li>• <i>Presence of particularly sensitive and/or tolerant species (6.2.1)</i></li> </ul>			
<ul style="list-style-type: none"> <li>• <i>Multi-metric indexes assessing benthic community conditions and functionally, such as species diversity and richness, proportion of opportunistic to sensitive species (6.2.2)</i></li> </ul>			
<ul style="list-style-type: none"> <li>• <i>Proportion of biomass or number of individuals in the macrobenthos above some specified length/size (6.2.3)</i></li> </ul>			
	<ul style="list-style-type: none"> <li>• <i>Parameters describing the characteristics (shape, slope and intercept) of the size spectrum of the benthic community (6.2.4)</i></li> </ul>		

## DESCRIPTOR 7: HYDROGRAPHIC CHANGE

Criteria	Draft Determination of GES Characteristics	Commission Indicator	Possible Targets
7.1 Spatial characterisation of permanent alterations	<p><i>GES for avoiding adverse ecosystem impacts arising from permanent alterations to prevailing hydrographical conditions will be achieved when:</i></p> <p><i>The nature and scale of any long-term changes to the prevailing hydrographical conditions (including but not limited to salinity, temperature, pH and hydrodynamics) resulting from anthropogenic activities (individual and cumulative), in the marine environment do not lead to significant negative impacts at a species<sup>11</sup>, population or ecosystem level, with the exception of highly modified water bodies or for reasons of over-riding public interest<sup>12</sup>.</i></p>	<ul style="list-style-type: none"> <li>• <i>Extent of area affected by permanent alterations (7.1.1)</i></li> </ul>	<p><i>Regional Target;</i></p> <ul style="list-style-type: none"> <li>• <i>Broad scale, sustained/long-term changes to hydrographical processes do not arise from anthropogenic activities taking place within the OSPAR maritime area, from both individual projects and as a result of cumulative effects.</i></li> </ul> <p><i>Development specific target;</i></p> <ul style="list-style-type: none"> <li>• <i>Sustained/long-term/permanent changes to Temperature/salinity/pH/dissolved oxygen/turbidity profiles do not extend further than the immediate proximity of the development.</i></li> <li>• <i>Temperature/salinity/pH/dissolved oxygen/turbidity profiles are within x (%/units) of an area and seasonal-specific background outside the immediate proximity of the development.</i></li> <li>• <i>Changes to water flows, currents and wave action do not result in significant adverse/negative changes to the sediment transport pathways and coastal processes outside the immediate proximity of the development.</i></li> </ul>
7.2 Impact of permanent hydrographical changes		<ul style="list-style-type: none"> <li>• <i>Spatial extent of habitats affected by the permanent alteration (7.2.1)</i></li> <li>• <i>Changes in habitats, in particular the functions provided (e.g. spawning, breeding and feeding areas and migration routes of fish, birds and mammals), due to altered hydrographical conditions</i></li> </ul>	<ul style="list-style-type: none"> <li>• <i>No development should result in permanent negative effects on the hydrographical conditions of Marine Protected Areas.</i></li> </ul>

<sup>11</sup> Limited to higher trophic levels (e.g. fish & marine mammals)

<sup>12</sup> As outlined under the Conservation Regulations.

		(7.2.2).	
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**Descriptor 8 - Concentrations of contaminants are at levels not giving rise to pollution effects.**

**Summary Table**

<b>Commission Criteria</b>	<b>Draft determination of GES characteristics</b>	<b>Commission Indicator</b>	<b>Possible Targets</b>
<b>8.1 Concentration of contaminants</b>	<p><i>GES for Descriptor 8 - will be achieved when:</i></p> <p><i>Concentrations of contaminants in water, sediment, or biota are not increasing and do not exceed environmental target levels identified on the basis of ecotoxicological data as outlined within community legislation and other obligatory agreements.</i></p>	<p>Concentration of the contaminants (outlined in Commission Decision), measured in the relevant matrix (such as biota, sediment and water) in a way that ensures comparability with the assessments under the Water Framework Directive (8.1.1)</p>	<p><i>Substances identified within relevant legislation and international obligations are within prescribed WFD/OSPAR Environmental Quality Standards (EQS) and Environmental Assessment Criteria (EAC) levels.</i></p>
<b>8.2 Effects of contaminants</b>	<p><i>Biological effects of contaminants are below environmental target levels considered to result in harm at organism, population, community, and ecosystem levels as outlined within community legislation and other obligatory agreements.</i></p>	<p>Levels of pollution effects on the ecosystem components concerned, having regard to the selected biological processes and taxonomic groups where a cause/effect relationship has been established and needs to be monitored (8.2.1)</p> <p>Occurrence, origin (where possible), extent of significant acute pollution events (e.g. slicks from oil and oil products) and their impact on biota physically affected by this pollution (8.2.2).</p>	<p><i>Intensity of biological or ecological effects of contaminants identified within relevant legislation and international obligations are less than the toxicological based standards established by combined ICES/OSPAR processes to avoid unacceptable biological effects of contaminants.</i></p> <p>No relevant target at current time. Further work needed.</p>

**Descriptor 9 - Contaminants in fish and other seafood for human consumption do not exceed levels established by Community legislation or other relevant standards.**

**Summary Table**

Criteria	Draft Determination of GES Characteristics	Commission Indicator	Possible Targets
<b>9.1 - Levels, number and frequency of contaminants</b>	<p><i>GES for contaminants in fish and shellfish destined for human consumption will be achieved when:</i></p> <p><i>Concentrations of those contaminants listed in community legislation or other relevant standards present in fish and shellfish destined for human consumption are at levels considered safe for human consumption where such levels have been established.</i></p>	<p>Actual levels of contaminants that have been detected and number of contaminants which have exceeded maximum regulatory levels (9.1.1)</p>	<p><i>Concentrations of contaminants in fish and shellfish for human consumption do not exceed thresholds outlined in community legislation or other standards relevant to human health.</i></p>
		<p>Frequency of regulatory levels being exceeded (9.1.2).</p>	<p><i>No target required here as it is a monitoring and reporting exercise.</i></p>

## DESCRIPTOR 10: LITTER

Criteria	Draft Determination of GES Characteristics	Commission Indicator	Possible Targets
10.1 Characteristics of litter in the marine and coastal environment	<p><i>GES for marine litter in UK waters will be achieved when:</i></p> <p><i>Litter and its degradation products currently present in, and entering into, UK waters is reduced over time and does not pose a significant risk to marine life at the population level, either as a result of direct mortality or by way of indirect impacts such as reduced fecundity and bioaccumulation within food chains.</i></p> <p><i>Litter currently present in, and entering into, UK waters does not pose a direct or indirect unacceptable risk to human welfare and does not lead to significant detrimental economic impacts for industry and coastal communities.</i></p>	<ul style="list-style-type: none"> <li>• Trends in the amount of litter washed ashore and/or deposited on coastlines, including analysis of its composition, spatial distribution and, where possible, source (10.1.1)</li> </ul>	<ul style="list-style-type: none"> <li>• Overall reduction [x%] in the [volume/weight] of litter on coastlines from 2010 levels by 2020.</li> <li>• [x%] reduction in [volume/weight/number] of plastic/fishing/sanitary litter items on coastlines from 2010 levels by 2020.</li> </ul>
		<ul style="list-style-type: none"> <li>• Trends in the amount of litter in the water column (including floating at the surface) and deposited on the sea-floor, including analysis of its composition, spatial distribution and, where possible, source (10.1.2)</li> </ul>	<ul style="list-style-type: none"> <li>• Trend analysis shows a measurable reduction in the [volume/weight/number] of litter items on the seafloor by 2020.</li> <li>• [x%] reduction in the number of sewage related viruses on coastlines from 2010 levels by 2020.</li> </ul>
		<ul style="list-style-type: none"> <li>• Trends in the amount, distribution and, where possible, composition of micro-particles (in particular micro-plastics) (10.1.3)</li> </ul>	<ul style="list-style-type: none"> <li>• No increase/slow rate of increase of micro-plastics by 2020.</li> </ul>
10.2 Impacts of litter on marine life		<ul style="list-style-type: none"> <li>• Trends in the amount and composition of litter ingested by marine animals (e.g. stomach analysis) (10.2.1).</li> </ul>	<ul style="list-style-type: none"> <li>• Less than 10% of northern fulmars (<i>Fulmarus glacialis</i>) having more than 0.1g plastic particles in their stomach<sup>13</sup>.</li> <li>• A reduction [no increase] in the amount of (species) population with litter 'obstacles/entanglement' or scarring.</li> <li>• No impact on cetaceans from marine litter at the population level by 2020.</li> </ul>

<sup>13</sup> OSPAR EcoQO

## DESCRIPTOR 11: NOISE

Criteria	Draft Determination of GES Characteristics	Commission Indicator	Possible Targets
<p><b>11.1</b>  <b>Distribution in time and place of loud, low and mid frequency impulsive sounds</b></p>	<p><i>GES for the introduction of energy, including underwater noise, is at levels that do not adversely affect the marine environment will be achieved when:</i></p> <p><i>Continuous low frequency sound inputs are maintained at, or decreased to, levels which minimise adverse impacts on marine mammal and fish populations such as the masking of biologically significant sounds and behavioural reactions.</i></p> <p><i>Human activities potentially introducing harmful levels of noise into the marine environment are controlled to the extent that no significant harm is incurred by marine life such as marine mammal and fish populations.</i></p>	<p><i>Proportion of days and their distribution within a calendar year over areas of a determined surface, as well as their spatial distribution, in which anthropogenic sound sources exceed levels that are likely to entail significant impact on marine animals measured as Sound Exposure Level (in dB re <math>1\mu\text{Pa}^2\text{s}</math>) or as peak sound pressure level (in dB re <math>1\mu\text{Pa}_{\text{peak}}</math>) at one metre, measured over the frequency band 10 Hz to 10 kHz (11.1.1)</i></p>	<p>An annual decrease is demonstrated in the number of days per year where anthropogenic sound sources exceed x db.</p>
<p><b>11.2</b>  <b>Continuous low frequency sound</b></p>	<p><i>GES for the introduction of energy, including underwater noise, is at levels that do not adversely affect the marine environment will be achieved when:</i></p> <p><i>Continuous low frequency sound inputs are maintained at, or decreased to, levels which minimise adverse impacts on marine mammal and fish populations such as the masking of biologically significant sounds and behavioural reactions.</i></p> <p><i>Human activities potentially introducing harmful levels of noise into the marine environment are controlled to the extent that no significant harm is incurred by marine life such as marine mammal and fish populations.</i></p>	<p><i>Trends in the ambient noise level within the 1/3 octave bands 63 and 125 Hz (centre frequency) (re <math>1\mu\text{Pa}</math> RMS; average noise level in these octave bands over a year) measured by observation stations and/or with the use of models if appropriate (11.2.1).</i></p>	<p>Average ambient noise levels do not show a per annum increase.</p> <p>Full ambient noise baseline available by 2016.</p>