



# Marine Management Organisation

## Sustainability Appraisal of the East Inshore and East Offshore Marine Plans

### Sustainability Appraisal Report

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Volume 2: SA Report

Final following post-consultation changes

# Marine Management Organisation




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#### Volume 2: SA Report

#### Final following post-consultation changes

|                  |                               |  |
|------------------|-------------------------------|--|
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This Sustainability Appraisal has been reported in three volumes as follows:

**Volume 1: Non-Technical Summary of the SA Report**

**Volume 2: SA Report**

**Volume 3: SA Report Appendices**

This report is Volume 2: The SA Report.

# CONTENTS

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|      |   |     |
|------|---|-----|
| 1    | INTRODUCTION .....  | 1   |
| 1.1  | Background to and Purpose of this Report .....                                  | 1   |
| 1.2  | Introduction to SA .....  | 2   |
| 1.3  | Structure of the SA Report .....  | 5   |
| 2    | WHAT IS THE SCOPE OF THE APPRAISAL? .....                                       | 7   |
| 2.1  | What are the East Marine Plans seeking to achieve? .....                        | 7   |
| 2.2  | SA Parameters .....   | 10  |
| 2.3  | What is the Sustainability Context and Baseline?.....                           | 14  |
| 2.4  | Consultation.....   | 23  |
| 2.5  | Appraisal Approach .....  | 25  |
| 2.6  | Links to Other Assessments .....  | 29  |
| 3    | WHAT HAS PLAN-MAKING / THE SA INVOLVED TO-DATE? .....                           | 31  |
| 3.1  | Introduction.....   | 31  |
| 3.2  | Alternatives considered .....   | 31  |
| 3.3  | Reasons for selecting the preferred approach.....                               | 33  |
| 3.4  | Appraisal of First Draft East marine plans September 2012.....                  | 35  |
| 3.5  | Appraisal of Second Draft East marine plans November 2012.....                  | 50  |
| 4    | WHAT ARE THE APPRAISAL FINDINGS FOR THE EAST MARINE PLANS? .....                | 59  |
| 4.1  | Introduction.....   | 59  |
| 4.2  | Policy Screening.....   | 59  |
| 4.3  | Air and Climate .....   | 61  |
| 4.4  | Communities and Health .....  | 66  |
| 4.5  | Cultural Heritage.....  | 70  |
| 4.6  | Marine Ecology.....   | 76  |
| 4.8  | Economy .....   | 87  |
| 4.9  | Geology, Geomorphology and Coastal Processes .....                              | 92  |
| 4.10 | Landscape and Seascape .....  | 101 |
| 4.11 | Water Environment.....  | 108 |
| 4.12 | Cumulative Effects from Interaction with Existing Policies and Strategies ..... | 113 |
| 5    | PROPOSED MEASURES TO MONITOR SIGNIFICANT EFFECTS.....                           | 124 |
| 5.1  | The Purpose of Monitoring .....   | 124 |
| 5.2  | The Approach to Monitoring .....  | 124 |

|     |                                    |                                     |
|-----|------------------------------------|-------------------------------------|
| 5.3 | The Monitoring Framework.....      | 125                                 |
| 6   | NEXT STEPS .....                   | 130                                 |
| 6.1 | Next Stages in the SA Process..... | <b>Error! Bookmark not defined.</b> |
| 6.2 | How to Comment on this Report..... | <b>Error! Bookmark not defined.</b> |

## CONTENTS OF VOLUME 3: SA APPENDICES

Appendix A: Air Quality and Climate Context and Baseline

Appendix B: Communities and Health Context and Baseline

Appendix C: Cultural Heritage Context and Baseline

Appendix D: Marine Ecology Context and Baseline

Appendix E: Economy Context and Baseline

Appendix F: Geology, Geomorphology and Coastal Processes Context and Baseline

Appendix G: Landscape and Seascape Context and Baseline

Appendix H: Water Environment Context and Baseline

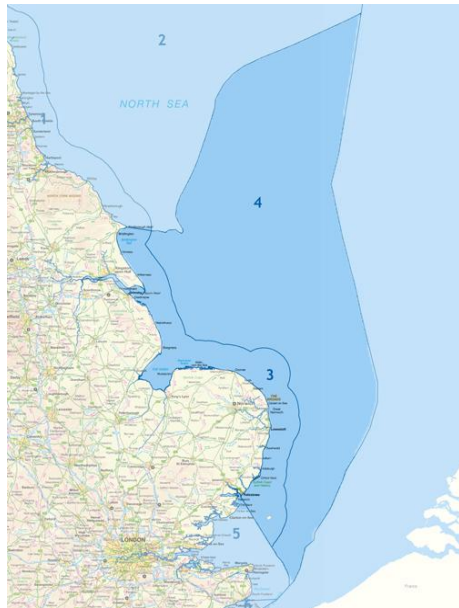
Appendix I: Policy Screening

Appendix J: Strategic Options Appraisal Tables

# 1 INTRODUCTION

## 1.1 Background to and Purpose of this Report

The Marine Management Organisation (MMO) has produced marine plans for England's East Inshore and Offshore areas. They set out how the UK Marine Policy Statement<sup>1</sup> (MPS) will be implemented in the plan areas. The MPS provides a framework for the marine planning process introduced by the Marine and Coastal Access Act 2009 (MCAA)<sup>2</sup> and provides high level policy context within which marine plans are to be prepared. The plan areas are shown in Figure 1-1.



**Figure 1-1 Boundaries of East Inshore and Offshore Marine Plans (areas 3 and 4)**

These are the first marine plans to be produced under the MCAA in England and they seek to take account of the social, economic and environmental factors that affect the East marine plan areas and the communities that are dependent on or have an interest in these areas. Marine plans form part of a new plan-led management system for marine activities. They aim to provide a more coherent policy context and a forward-looking, proactive and spatial planning approach to the management of the marine area, its resources, and the activities and interactions that take place within it. The plans look forward 20 years and will be subject to periodic review during this time.

As part of the marine plan-making process, a Sustainability Appraisal (SA) has been undertaken. This is a requirement of the MCAA<sup>3</sup>. The SA process and subsequent report incorporates the requirements of the European Union (EU) Strategic Environmental Assessment (SEA) Directive<sup>4</sup> as well

as an Equalities Impact Assessment Screening (EqIA)<sup>5</sup> which concluded that further equalities assessment was not required. In order to gain a full understanding of the process and its relation to the final East marine plans it is recommended that this document be read in full. The following chapters set out the SA/plan making process which has been undertaken.

SA is a process, incorporating the requirements of the SEA Directive, for identifying the social, economic and environmental impacts of a plan, assessing their significance and mitigating significant impacts where possible. As such, SA aims to ensure that sustainable development is at the heart of the plan-making process. The SA has been undertaken throughout the development of the marine plans and has informed the consideration of Options (alternatives)

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<sup>1</sup> HM Government (2011) UK Marine Policy Statement

<sup>2</sup> HM Government (2009) Marine and Coastal Access Act 2009

<sup>3</sup> *ibid*

<sup>4</sup> Directive 2001/42/EC of the European Parliament and of the Council of 27 June 2001 on the assessment of the effects of certain plans and programmes on the environment.

<sup>5</sup> An EqIA involves assessing the likely or actual effects of policies or services on people in respect of disability, gender and racial equality. It helps to make sure the needs of people are taken into account in the development and implementation of a new policy or plan or when changes are made to a current policy or plan.

which underpin them. The East marine plans have evolved in response to the SA, with recommendations made in the SA being incorporated into subsequent drafts of the East marine plans. These iterations are documented in the three volumes of this SA Report.

Volume 1 presents a Non-Technical Summary of the findings, written in plain English. Volume 2 (this document) presents the methodology, background and detailed findings of the SA. Volume 3 presents the technical appendices to be read in conjunction with Volume 2.

Note, this is the final SA Report which has been updated to reflect the final version of the marine plans following consultation feedback.

## 1.2 Introduction to SA

SA considers the economic, social and environmental impacts of an emerging plan (the three dimensions of sustainable development). The aim in undertaking SA is to identify a plan's likely significant adverse effects and take steps to avoid and/or mitigate these as well as identify opportunities to maximise the plans' sustainability.

The requirement for a SA in the marine plan process is set out in the MCAA, which stipulates that proposals for inclusion in marine plans are subject to SA. The Act states the relevant authority (the MMO) can only proceed with those proposals if they consider that the results of the appraisal indicate that it is appropriate to do so<sup>6</sup>, and that it is undertaken in line with the procedures prescribed by the SEA Directive. The MMO has chosen to reflect the requirements of the SEA directive in this SA Report and throughout the SA process. Published Government guidance on SEA<sup>7</sup> (referred to as the Practical Guide) has been followed in developing the approach to this SA in order to ensure compliance with the SEA Directive.

SA differs from SEA in that it gives greater consideration to socio-economic issues (although the SEA Directive refers to a possible need to consider issues such as 'population' and 'human health').

The purpose of SEA is:

*"...to provide for a high level of protection of the environment and to contribute to the integration of environmental considerations into the preparation and adoption of plans and programmes with a view to contributing to sustainable development".*

(Article 1 of the SEA Directive)

That the MMO has chosen to appoint an independent contractor to carry out the SA process (and through it provide an independent check and balance) reflects the emphasis that the MMO put on, marine plans being developed to reflect the principles of sustainable development. The SA ensures that sustainability issues are considered in a clear and transparent manner. In particular, the SA process ensures a structured and systematic consideration of sustainability issues through its focus on testing and comparing the merits of different plan alternatives as well as consultation with key stakeholders.

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<sup>6</sup>HM Government (2009) Marine and Coastal Access Act 2009. Schedule 5 (7) (1-4)

<sup>7</sup> ODPM *et al.* (2005) A Practical Guide to the Strategic Environmental Assessment Directive

## 1.2.1 The SA process

The stages in the SA process have been developed to take into account the five procedural stages of SEA outlined in the Practical Guide<sup>7</sup>:

Stage A: Setting the context establishing the baseline and deciding on the scope of the appraisal (note this is referred to as the 'scoping' phase)

Stage B: Developing and appraising marine plan alternatives and appraising the draft plan

Stage C: Preparing the SA Report

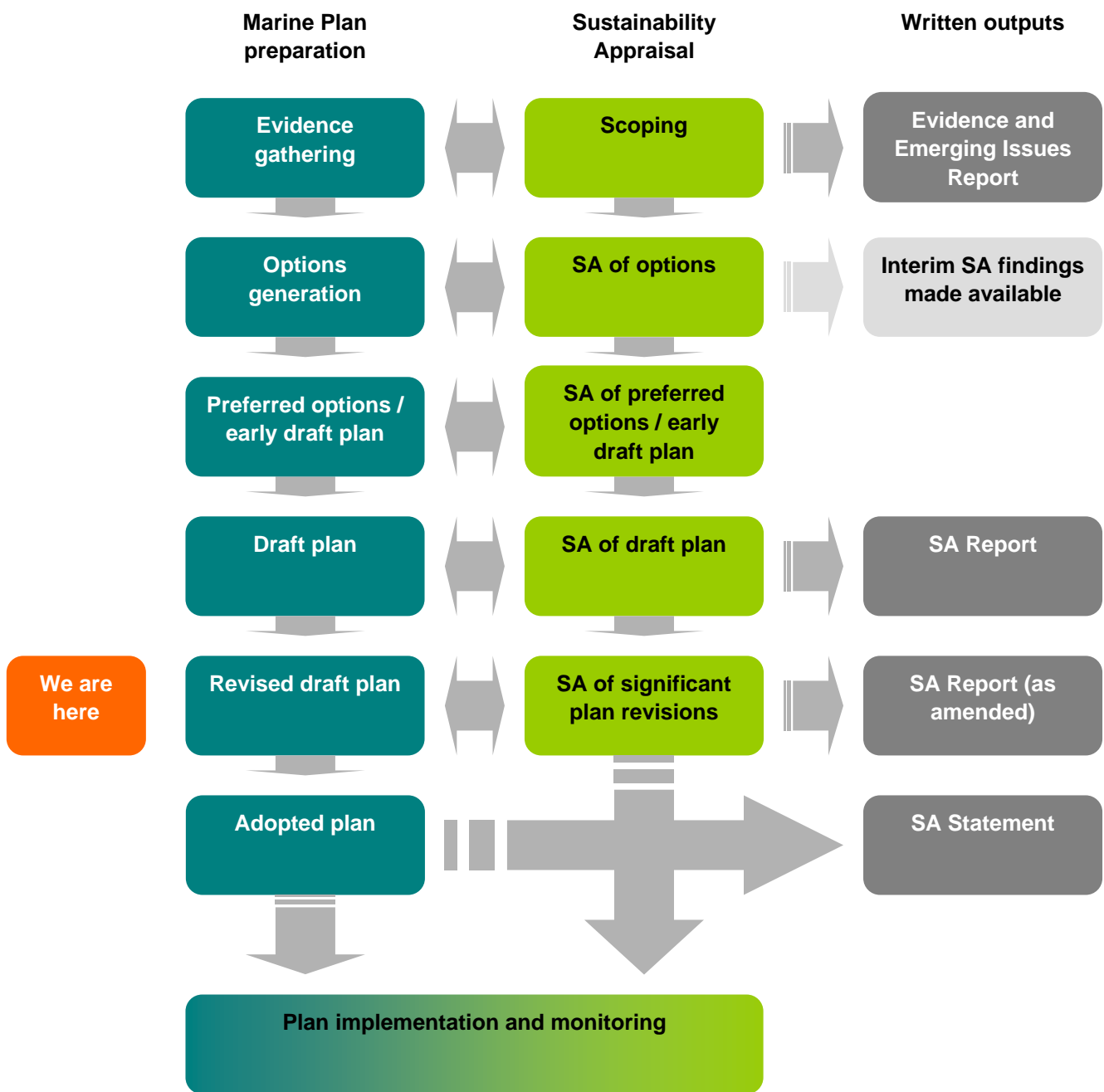
Stage D: Consulting on the draft marine plans and the SA Report

Stage E: Monitoring the significant effects of implementing the marine plans as identified through the SA

In practice, Stage B is an iterative process undertaken in parallel with the preparation of the marine plans and has fed into the plans' development at appropriate intervals – see Figure 1-1 below. SA is particularly important at the Options stage when its findings help inform the choice between competing alternatives.



Figure 1-1 Stages in the SA Process



## 1.3 Structure of the SA Report

Table 1-1 outlines how the SA Report is structured, a summary of its contents and how it meets the requirements of the SEA Directive.

Table 1-1 Structure of the SA Report

| Section of the SA Report                                       | Summary of Contents   | Corresponding requirement of the SEA Directive Annex 1 ( <i>the report must include...</i> )   |
|--|---|--|
| <b>Volume 1: Non-Technical Summary</b>                         |   |  |
| Non-Technical Summary  | Presents a summary of the SA in plain English.  | <b>"a non-technical summary of the information provided..."</b> (Annex 1(j))   |
| <b>Volume 2: SA Report</b>                                     |   |  |
| 1: Introduction  | Introduction, background and purpose of the Report.<br><br>Introduction to the SA process and structure of the Report.  | -  |
| 2: What is the Scope of the Appraisal?                         | Outline of the marine plans and scope of the SA including introduction to context and baseline data, methodology, consultation and links to other relevant appraisals being undertaken.   | <b>"an outline of the contents, main objectives of the plan or programme</b> and relationship with other relevant plans and programmes" (Annex I(a))<br><br><b>"... a description of how the assessment was undertaken</b> including any difficulties (such as technical deficiencies or lack of know how) encountered in compiling the required information" (Annex I(h))   |
| 3: What has Plan-Making / the SA Achieved To-Date?             | Development and appraisal of alternatives and appraisal work undertaken prior to the drafting of the draft plans. This includes an interim SA of two initial drafts of the marine plans.  | <b>"an outline of the reasons for selecting the alternatives dealt with, ..."</b> (Annex I(h))   |
| 4: What are the Appraisal Findings for the Draft Marine Plans? | Describes the appraisal findings and recommendations for mitigation/enhancement measures for the draft marine plans.<br><br>This section is divided into each of the SA appraisal topics. | <b>"the likely significant effects on the environment,</b> including on issues such as biodiversity, population, human health, fauna, flora, soil, water, air, climatic factors, material assets, cultural heritage including architectural and archaeological heritage, landscape and the interrelationship between the above factors" (Annex I(f))<br><br><b>"the measures envisaged to prevent, reduce and as fully as possible offset any significant adverse effects on the environment of implementing the plan or programme"</b> (Annex I(g)) |
| 5: Proposed Measures to Monitor Significant Effects            | Outline proposed monitoring framework.  | <b>"a description of the measures envisaged concerning monitoring..."</b> (Annex I(i))   |

| Section of the SA Report              | Summary of Contents  | Corresponding requirement of the SEA Directive Annex 1 ( <i>the report must include...</i> )  |
|---------------------------------------|--|---|
| 6: Next Steps                         | The next steps envisaged for consultation, update and adoption of the marine plans and the SA.   | -   |
| <b>Volume 3: SA Report Appendices</b> |  |   |
| Appendices A-K                        | Each topic-based appendix presents an introduction to the policy context and baseline information for each topic. This includes a projection of how the baseline may evolve in the absence of the marine plans and the key issues and opportunities facing each topic. | <p>"an outline of the contents, main objectives of the plan or programme and <b>relationship with other relevant plans and programmes</b>" (Annex I(a))</p> <p><b>"the environmental protection objectives, established at international, Community or member state level, which are relevant to the plan or programme</b> and the way those objectives and any environmental considerations have been taken into account during its preparation" (Annex I(e))</p> <p><b>"the relevant aspects of the current state of the environment</b> and the likely evolution thereof without implementation of the plan or programme" (Annex I(b))</p> <p><b>"the environmental characteristics of areas likely to be significantly affected"</b> (Annex I(c))</p> <p>"the relevant aspects of the current state of the environment and <b>the likely evolution thereof without implementation of the plan or programme</b>" (Annex I(b))</p> <p><b>"any existing environmental problems which are relevant to the plan or programme including, in particular, those relating to any areas of a particular environmental importance</b>, such as areas designated pursuant to Directives 79/409/EEC [special protection areas under the Birds Directive] and 92/43/EEC" (Annex I(d))</p> |
| Appendix I                            | Provides an overview of the plan policy screening against relevant appraisal topics  | -   |
| Appendix J                            | Appraisal of strategic Options   | -   |

## 2 WHAT IS THE SCOPE OF THE APPRAISAL?

### 2.1 What are the East Marine Plans seeking to achieve?

#### 2.1.1 Context

England's East Inshore and Offshore marine plans set out how the UK MPS will be implemented in the plan area. They reflect the MPS at this sub-national level, taking into account the social, economic and environmental factors that affect the East marine plan areas and the communities that are dependent on or have an interest in the marine areas.

Marine plans, and their reflection of the MPS, form part of a new plan-led regulatory system for marine activities. One of the functions of the Marine Management Organisation is to undertake marine planning in England. Marine plans seek to provide greater coherence of policy and a forward-looking, proactive and spatial approach to the management of the marine area, its resources and the activities and interactions that take place within it.

The UK Government vision for the marine environment is for, "*clean, healthy, safe, productive and biologically diverse oceans and seas*".<sup>8</sup> The UK high level marine objectives published in April 2009 set the broad outcomes for the marine area in achieving this vision, and reflect the principles for sustainable development. The high level marine objectives are:

- achieving a sustainable marine economy;
- ensuring a strong, healthy and just society;
- living within environmental limits;
- promoting good governance: and,
- using sound science responsibly.

The aim of marine planning is to ensure a sustainable future for our coastal and offshore waters through managing and balancing the many activities, resources and assets in our marine environment.

It was decided early in the policy development process that marine planning should follow a similar approach to terrestrial planning in order that the two systems complement one another to aid integration at the land-sea boundary. Therefore, like terrestrial plans, marine plans will set the direction for decision making to ensure efficient and sustainable use of our marine resources.

Marine plans are intended to guide:

- marine users to the most suitable locations for different activities
- the use of marine resources to ensure sustainable levels
- all marine users to ensure everyone with an interest has an opportunity to contribute to marine plans
- a holistic approach to decision making and consider all the benefits and impacts of all the current and future activities that occur in our marine environment.

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<sup>8</sup> HM Government (2011) UK Marine Policy Statement

The MMO was established in 2010 following the Marine and Coastal Access Act (MCAA) 2009<sup>9</sup> and one of its delegated responsibilities is to prepare marine plans for the English inshore and offshore waters.

These marine plans will inform and guide regulation, management, use and protection of the marine plan areas. The MCAA<sup>10</sup> (S.58) requires that all public authorities taking authorisation or enforcement decisions which may affect the UK marine area, e.g. on an approval, confirmation, consent, licence, permission, must to do so in accordance with marine policy documents (marine plans and the MPS) unless relevant considerations indicate otherwise. An exception is decisions on applications for development consent for nationally significant infrastructure projects (NSIPs) under the Planning Act 2008.

These marine plans must be in conformity with the MPS and in accordance with other UK national policy including the Planning Act 2008, National Planning Policy Framework (NPPF), National Policy Statements (NPSs) such as those for ports and energy and the procedures for consents of nationally significant infrastructure projects. Relevant provisions in these plans and policies were identified and formed policy drivers for the marine plans.

The MCAA<sup>11</sup> divides UK waters into marine planning regions with an inshore region (0-12 nautical miles) and offshore region (12 – c.200 nautical miles) and limits the boundaries of any marine plan to being within a region (meaning a marine plan cannot include both inshore and offshore regions). Based on early stakeholder feedback, and to provide a consistent and simple approach to the East Inshore and Offshore Marine Plans, the MMO decided to prepare adjacent inshore and offshore plans through a single integrated process. Therefore, a single ‘plan document’ has been produced with distinctions made as to which policies are relevant to either the East Inshore or East Offshore marine plan area, or to both.

## 2.1.2 Scope of the East Marine Plans

The East marine plans seek to support and complement existing plans wherever appropriate. Signposting is used in the East marine plans to point towards relevant information and policies held in other existing plans. This avoids replication of policies and ensures that new plan policies and supporting information focus on issues where they need to add value. To enable integrated coastal planning, specific attention has been given to assessing the policies in local development frameworks and other plans to inform the production of these marine plans.

Gaps in the evidence base along with recent revisions to national planning policy have resulted in these first marine plans not including specific spatial or resource allocations for some policies. Instead of being prescriptive (although some policies have expressed spatially), such plan policies act as a guide for public authorities to ensure that all relevant considerations are taken into account, no matter what space they occupy. Indeed when developing strategic Options for the marine plans, the possibility of being spatially prescriptive had to be discounted at an early state, limiting the Options to just a few sectors.

## 2.1.3 East Marine Plans’ Vision

A vision and objectives for the East marine plans were developed through informal consultation with stakeholders, including individual focus and steering group meetings, with the aim of setting

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<sup>9</sup> HM Government (2009) Marine and Coastal Access Act 2009.

<sup>10</sup> *ibid*

<sup>11</sup> *ibid*

out the plans' aspirations and how this might be achieved. The final versions of these as presented in the East marine plans are provided below.

## Vision for 2033

*By 2033 the East Inshore and Offshore marine areas are providing a substantial part of the electricity generated from offshore wind in the UK as a result of collaboration and integration between sectors. Sustainable, effective and efficient use of our marine area has been achieved, resulting in economic development whilst protecting the marine ecosystem, and offering local communities new jobs, wealth, improved health and well-being.*

## How will this look in 2033?

*This vision means that by 2033, both the East Inshore and East Offshore marine plan areas will have good environmental status (in accordance with the Marine Strategy Framework Directive), and relevant habitats and species will be in 'favourable conservation status' (as required under the Habitats and Wild Birds Directives). This is partly as a result of a well-managed and ecologically coherent network of marine protected areas (MPAs). New activities, developments and uses will have been implemented and managed to ensure, alongside environmental protection, that sustainability has been achieved.*

*Offshore wind farms in the East Inshore and East Offshore Marine Plan areas will be making a significant contribution to meeting the UK's target under the EU Renewable Energy Directive<sup>38</sup> and the Climate Change Act 2008<sup>39</sup>. This includes significant amounts of essential infrastructure (such as the onward transportation of goods or energy), in both marine areas and around the coast. The offshore wind industry will have been developed in a way that does not compromise the importance of European and international shipping links and connectivity with other countries, together with the essential requirements of navigational safety.*

*New developments of infrastructure in the Inshore and Offshore marine areas will have been undertaken in a way that enables sustainable commercial fishing, aquaculture, and aggregate extraction to continue in the future. New developments and existing activities within both Marine Plan areas will be providing economic and social benefits, particularly to the communities along the East coast.*

*The best use will be made of new technologies in the Inshore and Offshore Marine Plan areas, contributing to sustainable / low carbon energy production from wave and tidal energy, and climate change mitigation through the transport and storage of carbon dioxide emitted from fossil fuel use. Gas extraction continues to be an important activity and new technologies will have improved the ability to extract oil and gas from reserves in the marine areas, with minimal environmental impact.*

*As a result of effective planning across land and sea, and an appreciation of the unique features of the East Marine Plan areas, tourism and recreation continues to make a significant contribution to the prosperity and wellbeing of people, particularly as a direct result of the management of the East Inshore Marine Plan area.*

## 2.1.4 East Marine Plans' Objectives

The East marine plans set out the following objectives for delivering the vision:

|                      |  |
|----------------------|--|
| <b>Objective 1:</b>  | To promote the sustainable development of economically productive activities taking account of spatial requirements of other activities of importance to the East marine plan areas.   |
| <b>Objective 2:</b>  | To support activities that create employment at all skill levels, taking account of the spatial and other requirements of activities in the East marine plan areas.  |
| <b>Objective 3:</b>  | To realise sustainably the potential of renewable energy, particularly offshore wind, which is likely to be the most significant transformational economic activity over the next 20 years in the East marine plan areas, helping to achieve the UK's energy security and carbon reduction objectives. |
| <b>Objective 4:</b>  | To reduce deprivation and support vibrant, sustainable communities through improving health and social well-being.   |
| <b>Objective 5:</b>  | To conserve heritage assets and ensure that decisions consider the character of the local area.  |
| <b>Objective 6:</b>  | To have a healthy, resilient and adaptable marine ecosystem in the East marine plan areas.   |
| <b>Objective 7:</b>  | To protect, conserve and, where appropriate, recover biodiversity that is in or dependent upon the East marine plan areas.   |
| <b>Objective 8:</b>  | To support the objectives of marine protected areas (and other designated sites around the coast that overlap, or are adjacent to the East marine plan areas), individually and as part of an ecologically coherent network.   |
| <b>Objective 9:</b>  | To facilitate action on climate change adaptation and mitigation in the East Marine Plan areas.  |
| <b>Objective 10:</b> | To ensure integration with other plans and regulation and management of key activities and issues in the East marine plan, and adjacent areas.   |
| <b>Objective 11:</b> | To continue to develop the marine evidence base to support development, monitoring and review of marine planning in the East marine plan areas.  |

## 2.1.5 Structure of the East Marine Plans

The East marine plans are structured as follows:

Chapter 1 – Background and overview

Chapter 2 – Vision and Objectives

Chapter 3 Plan Policies

Chapter 4 – Implementation, monitoring and review

Chapter 5 – Glossary and acronyms

## 2.2 SA Parameters

### 2.2.1 Aspects of the East Marine Plans Appraised

The following aspects of the East marine plans have been identified as the key elements of the plans, in other words, those aspects that are not simply contextual or procedural but those which will be used in decisions to grant consent (or otherwise) for future activities in the marine area and therefore represent the key decisions made as part of the plan-making process:

- The Plan Options; and
- The plan policies (including reference to the objectives and where appropriate, supporting policy maps)

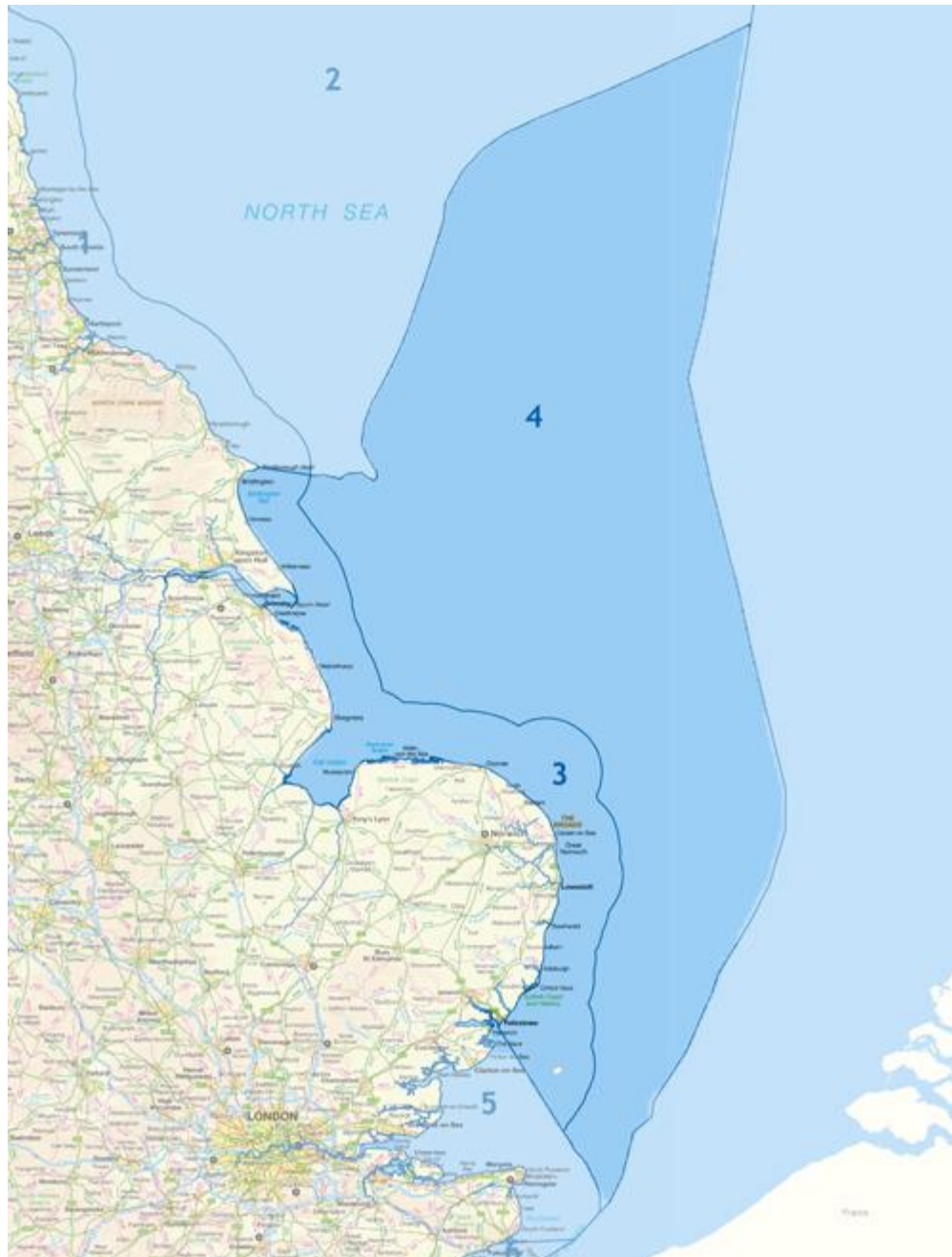
As such, it is these elements which have been subject to the SA. It should be made clear that the East Inshore and Offshore Marine Plans have been written as one document with inshore and offshore elements identified where relevant. A single SA has consequently been undertaken on both plans.

## 2.2.2 Geographical Scope of the SA

The East marine plans cover the East Inshore and East Offshore areas and are the first areas in England to be selected for marine planning. The East Inshore area includes the area of sea within the seaward limits of the territorial sea adjacent to the UK (to 12 nautical miles (nm)). This is a coastline that stretches from Flamborough Head to Felixstowe. The East Offshore area extends outwards from the boundary of the territorial waters to the limit of the UK's Exclusive Economic Zone and north and southwards to the boundaries with the adjacent marine planning areas. The areas are illustrated in Figure 2-1.



Figure 2-1 Boundaries of East Inshore (3) and Offshore (4) Marine Plans



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The SA covers direct and indirect effects within the East marine plan areas but also considers possible indirect effects in neighbouring areas including terrestrial areas and those for other EU countries where relevant. The latter are known as transboundary effects. The marine plans look at and consider activities for at least 20 years from their adoption. This enables the SA to consider the effects of the plans over these 20 years and beyond where possible. It should be noted that due to the long period of coverage, there are acknowledged uncertainties inherent in

the appraisal. A separate supporting document has been produced<sup>12</sup> which gives an up-to-date analysis of what are considered to be the potential benefits of the marine plans.

### 2.2.3 Temporal Scope of the SA

The East marine plans will cover the period to 2033. This enables the SA to consider the effects of the plans over the next 20 years and beyond where possible. It should be noted that making predictions beyond 20 years into the future greatly increases the levels of uncertainty in the prediction of effects.

### 2.2.4 Level of Detail and Uncertainty

Recent research for the Department for Communities and Local Government (DCLG)<sup>13</sup> on SEA efficiency and effectiveness clarifies that the level of detail of the appraisal should correspond to the level of detail of the plan being appraised. The East marine plans are regional scale, strategic plans which do not seek to address site or project-specific details. The SA does not therefore consider impacts at the project or site scale.

The East marine plans cannot directly result in the development of new activities although in many cases they do re-affirm existing national-level policy by promoting known activities in the area such as offshore wind, aggregates extraction and the oil and gas industry. They provide guidance for decision-makers to assist in consenting (or otherwise) activities in the areas. The proposed location and nature of new activities, however, will depend upon market forces and development proposals put forward.

This results in considerable uncertainty when predicting the effects of activities and consequently only high-level risks can be identified together with the extent to which the East marine plans seek to safeguard against these risks and avoid or offset adverse impacts. Correspondingly, this SA's predictions and proposed mitigation measures are at a strategic level. The appraisal sections in Chapter 4 identify uncertainties within the appraisal under each topic. These appraisals include an indication of the level of certainty involved in the prediction.

Decision-makers will have to follow the guidance in the East marine plans and the MPS when considering the potential impacts of an activity and when taking decisions about whether consent for a specific activity should be granted i.e. they are taken within the context of existing and proposed legislative and related permitting measures, policy and plans. Whilst it is assumed that decision-makers should make decisions based upon the most sustainable outcomes, this reliance on case-by-case judgement results in a further level of uncertainty in the appraisal. This is in part mitigated by the requirement in law for statutory consultation bodies such as the Environment Agency (EA), English Heritage (EH) and Natural England (NE) for example, to be consulted upon applications which require Environmental Impact Assessments (EIAs).

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<sup>12</sup> MMO (2014) Analysis of the East Inshore and East Offshore Marine Plans

<sup>13</sup> DCLG (2010) *'Towards a more efficient and effective use of Strategic Environmental Assessment and Sustainability Appraisal in spatial planning'*,

## 2.3 What is the Sustainability Context and Baseline?

### 2.3.1 Topics covered in the SA

The scope of the SA reflects potential environmental, social and economic effects of the East marine plans.

The 2005 UK Sustainable Development Strategy defines the goal of sustainable development as “*to enable all people throughout the world to satisfy their basic needs and enjoy a better quality of life, without compromising the quality of life of future generations*”. It sets out the following five guiding principles to achieve it:

- living within environmental limits;
- ensuring a strong, healthy and just society;
- achieving a sustainable economy;
- promoting good governance; and
- using sound science responsibly.

The topics to be addressed in the SA have been developed with these principles in mind while considering the requirements of the SEA Directive, which lists a number of environmental as well as social and economic topics that might be considered as part of any assessment. It should be noted that no one strand of sustainable development is considered more or less important than any another and the topics considered as part of the SA have all been afforded equal weight in the appraisal process.

Table 2-1 identifies the topics covered and their relationship with the topics listed in Annex I of the SEA Directive. The scoping consultation (with statutory/regulatory consultees) confirmed the need to scope all of these topics into the appraisal process i.e. all are relevant to the SA and should be considered.

**Table 2-1 Topics covered in the SA and relevant SEA Directive topics**

| <b>Topics covered in the SA</b>              | <b>Relevant topics listed in Annex I of the SEA Directive</b>         |
|--|---|
| Air and Climate                              | Air, Climatic factors   |
| Communities and Health                       | Population; human health  |
| Cultural Heritage                            | Cultural heritage including architectural and archaeological heritage |
| Marine Ecology                               | Biodiversity; flora; fauna  |
| Economy                                      | Population; material assets   |
| Geology, Geomorphology and Coastal Processes | Soil  |
| Landscape and Seascape                       | Landscape   |
| Water Environment                            | Water   |

Many of the SA topics overlap and are interrelated - an effect with respect to one topic may also result in a direct or indirect effect in relation to other topics. Climate change, for example, is a cross-cutting issue that is relevant to all the topics identified. The marine environment is

particularly sensitive in this respect and attention has been paid to the inter-relationships between these topics throughout the SA.

Annex I also requires an assessment of transboundary effects, i.e. effects upon other EU member states. The results of this are discussed at the end of Chapter 4.

## 2.3.2 Context and establishing the baseline

For all of the topics included within the SA, it is necessary to understand how the East marine plans and the SA fit into the existing hierarchy of plans, programmes, strategies and environmental protection objectives and to understand the existing conditions and key issues and opportunities that should be considered as part of the appraisal process. It is also necessary to consider how the East marine plans will interact with the broader framework of Government policies and objectives aimed at achieving a sustainable economy.

It is also important to understand the existing conditions (known as baseline conditions) and key issues and opportunities that should be considered as part of the appraisal process. Further information relating to the scope of each of the SA topics and background information to support the appraisal is presented in Appendices A-H of this report. Over 100 documents were reviewed ranging from the outcomes of the World Summit on Climate Change through to relevant European Directives (e.g. the Marine Strategy Framework Directive (MSFD)) and local Shoreline Management Plans (SMPs). The information contained within these appendices has been used to inform the SA. Each appendix includes information required by the SEA Directive and each is structured around the following headings:

- **What is the policy context?** Summary of relevant plans, initiatives and environmental protection objectives which are relevant to the MPS in relation to each topic. This is an SEA Directive requirement.
- **What is the baseline situation?** Summary of baseline characteristics of the marine plan areas for that topic. This is an SEA Directive requirement.
- **What would the situation be without the East marine plans?** Evolution of the baseline that is anticipated in the absence of the East marine plans. This is an SEA Directive requirement.
- **What are the key issues?** Key issues and opportunities for marine planning with regard to that topic. This is an SEA Directive requirement.
- **Are there any data gaps?** This is an SEA Directive requirement. (because of the requirement to document any problems encountered etc.)

## 2.3.3 Key issues identified through scoping

Table 2-2 summarises the key issues and opportunities identified for each topic in Appendices A-H.

**Table 2-2 Summary of Key Issues and Opportunities for each SA Topic**

| SA Topic               | Key Issues   | Key Opportunities   |
|------------------------|--|---|
| Air and Climate        | <ul style="list-style-type: none"> <li>• There is a need to ensure the maximum sustainable deployment of offshore wind and marine renewable technologies;</li> <li>• Potentially suitable geological storage areas for carbon dioxide should be safeguarded.</li> <li>• Air pollution associated with oil and gas exploitation and related industrial activities can be locally problematic.</li> <li>• Marine planning could contribute to reducing further growth in emissions from the transport sector (shipping, aviation, road, rail)</li> </ul>   | <ul style="list-style-type: none"> <li>• The East of England Marine Areas have significant potential for renewable/low carbon energy development. The East marine plans could support this in sustainable locations.</li> </ul>   |
| Communities and Health | <ul style="list-style-type: none"> <li>• Social issues relate to households and individuals as well as communities.</li> <li>• There is a need to address socio-economic deprivation, including income inequalities, increasing unemployment, low educational attainment and skills levels in order to tackle existing social and health inequalities.</li> <li>• Tourism and recreation have some existing role in contributing to social wellbeing and health.</li> <li>• Coastal communities adjacent to the East Inshore plan area include towns which are amongst the 10 per cent most deprived communities in England. Amongst these, fishing has declined as a significant contributor to employment and economy, though it retains social and heritage value.</li> <li>• A very wide range of other policies and initiatives influence community, health and equality. This makes it difficult to identify and judge the significance of the East marine plans policies on the existing situation.</li> <li>• Whilst the region has a relatively small Black and Minority Ethnic (BME) population, A2 and A8 migrant populations as well as Gypsy and Traveller populations experience particular vulnerabilities, including with respect to employment creation.</li> </ul> | <ul style="list-style-type: none"> <li>• The East marine plans provide an opportunity to direct investment towards areas of deprivation, potentially to help improve the quality of the living environment and opportunities, in order to tackle causes of social and health inequality and poor community cohesion;</li> <li>• Opportunities to create new employment, including jobs at a variety of levels, and to drive an increased emphasis on education, skills and training so that disadvantaged groups living in the area are able to share in the benefits of investment;</li> <li>• Potential to provide opportunities which enable young people to remain in or be drawn to the region;</li> <li>• Potential opportunities to strengthen tourism and leisure provision, with benefits for healthy living and community cohesion; and</li> <li>• Potential opportunities to mitigate climate change impacts for coastal communities and enhance resilience of towns with significant ageing populations.</li> </ul> |

| SA Topic          | Key Issues   | Key Opportunities  |
|-------------------|--|--|
| Cultural Heritage | <ul style="list-style-type: none"> <li>• Knowledge of marine archaeology is limited by the practical and economic problems involved in searching large areas of the sea floor, however, archaeological research frameworks are published that guide further studies e.g. The North Sea Prehistory Research and Management Framework.</li> <li>• Developments in the offshore zone have the potential to uncover, disturb or destroy archaeological remains lying on or under the sea bed and any impacts should be taken into account in decision making as informed by SEA and EIA procedures. Of particular concern are major infrastructure developments such as the construction of oil and gas installations, commercial ports and offshore wind farms. Indirect impacts are not always fully appreciated. They include changes to local current patterns, sediment movements and scour from cables and structures.</li> <li>• The cumulative effects of marine activities upon heritage assets are of particular concern.</li> <li>• Dredging (including aggregate extraction) and benthic fishing methods may disturb the sea bed and damage exposed sites.</li> <li>• Whilst artificial coastal defence works can help to retain the stability of fast-eroding sections of coastline, they can have adverse impacts downdrift and offshore as sediment movement becomes disrupted. Increased rates of scour may expose or erode deposits of potential archaeological value. The resulting situation is one which requires continual surveying of coastal sites or surveying at a suitable frequency so that the condition of sites might be monitored and any important artefacts recovered. In many cases erosion is geologically controlled, such as at Holderness.</li> <li>• The visual impacts of developments on the landscape/seascape<sup>14</sup> have the potential to affect the setting of historical features and therefore reduced local revenue. These may arise from both offshore developments and their coastal-based infrastructure. Changes may be significant from a heritage perspective, but also affect the potential</li> </ul> | <ul style="list-style-type: none"> <li>• The East marine plans provide an opportunity to improve the protection of heritage resources in the coastal and offshore zones.</li> <li>• Opportunities to gain a greater insight into the marine archaeological resource may be possible if measures are adopted that place new information in the public realm and support access.</li> <li>• Potential advantages to heritage tourism if coastal sites are protected, discovered or enhanced through appropriate management.</li> </ul> |

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<sup>14</sup> Wessex Archaeology (2007). Historical Environment Guidance for the Offshore Renewable Energy Sector. Published by COWRIE Ltd, UK, 52pp.

| SA Topic       | Key Issues   | Key Opportunities  |
|----------------|--|--|
|                | <p>for income from tourist-related activities.</p> <ul style="list-style-type: none"> <li>• Commercial salvage and attrition as a result of recreational diving are localised threats to the shipwreck resource, and it is not clear how much has been salvaged from wrecks on the UK continental shelf, though it is likely that it is under reported<sup>15</sup>.</li> <li>• An erosion of 'way of life' associated with declining fishing communities in which historic connections and family ties with the fishing industry may be diminishing. The same may be true of other industries where pressures to reduce manpower or reform working practices would have an adverse impact on cultural associations.</li> <li>• Archaeological sites in offshore areas and north of the Dogger Bank are even less well known than the more intensively studied southern North Sea, though there is a chance that material of Palaeolithic or early Mesolithic provenance exists.</li> <li>• The co-location of other activities and developments with sites and areas of archaeological interest requires attention to optimise spatial planning and thereby support access and long-term conservation.</li> </ul> |  |
| Marine Ecology | <ul style="list-style-type: none"> <li>▪ Climate change: rising global air and sea temperatures and associated sea-level rise has implications for all receptors considered in the marine ecology chapter, for instance the loss of intertidal habitat through coastal squeeze. More direct changes include a change in the plankton growing season and the distribution of certain fish species which may also be prey species for other animals such as seals. Ocean acidification, through the uptake of CO2 from the atmosphere, is predicted to have negative impacts on calcifying organisms, which will resonate at higher trophic levels.</li> <li>▪ Habitat loss and disturbance: fishing impacts include the potential depletion of commercial fish stocks, impacts on benthic habitats and bycatch of non-target fish species, impacts on seabirds, marine reptiles and cetaceans. Habitat damage resulting from the harvesting of shellfish (such as scallop dredging) can also cause changes to marine ecosystems. On a smaller scale, direct impacts on benthic habitats arise from aggregate extraction, wind farm installation and other offshore subsea installation.</li> </ul>                  | <ul style="list-style-type: none"> <li>▪ The East marine plans should contribute to the achievement of targets associated with, for instance, the implementation of the MSFD in the UK.</li> <li>▪ The MMO should maximise the opportunities for integrating policy outcomes when drafting the East marine plans (such as developments building-in beneficial features for marine ecology as part of good design).</li> <li>▪ The East marine plans provide the opportunity to set in policy how MCZs should be regarded in applications and consenting decisions once MCZs in the areas have been fully established.</li> </ul> |

<sup>15</sup> Wessex Archaeology (2008). Wessex Archaeology website (accessed March 2008) <http://news.wessexarch.co.uk/2008/03/09/evidence-of-ice-age-hunters-found-below-northsea/>



| SA Topic | Key Issues  | Key Opportunities   |
|----------|---|---|
|          | <ul style="list-style-type: none"> <li>▪ Marine litter: ingestion of or entanglement in marine litter by fish, mammals, reptiles and birds can result in mortality.</li> <li>▪ Marine noise: anthropogenic activities in the East Inshore and East Offshore areas which generate marine noise include shipping, oil and gas exploration and production and wind farm installation (presently largely reliant on pile driving). Marine mammals are of principal concern, though fish and cephalopods may also be subject to disturbance by noise.</li> <li>▪ Pollution: estuarine fish species are still subject to pressure from inputs of pollutants and coastal developments, though a number of initiatives are helping to improve the physical and chemical quality of rivers and estuaries.</li> <li>▪ Non-native species: the spread of non-native species may be accentuated by climate change (above). National and international initiatives to limit the transport of invasive species include the GloBallast Partnership Programme and the Invasive Non-native Species Strategy for Great Britain.</li> </ul>  |   |
| Economy  | <ul style="list-style-type: none"> <li>▪ Perhaps the key issue identified through scoping is the need to encourage private sector investment and enterprise, particularly in those localities currently underperforming and/or reliant on Government jobs and investment. This should help to ensure that growth is sustainable in the longer-term.</li> <li>▪ At the same time, there is a need to recognise that not all places and all sectors will wish to focus on becoming more competitive. Keeping things as they are in some instances can help to secure a diverse economic base and support local distinctiveness. There is a need to support long established industries as well as those that are emerging and developing.</li> <li>▪ In terms of addressing economic barriers associated with localities, there is a particular need to support investment in infrastructure, including, where possible, transport infrastructure that helps to address the problem of geographic peripherality.</li> <li>▪ There is a need to support the Humber area and the Great Yarmouth / Lowestoft area as they seek to develop a competitive advantage in relation</li> </ul> | <ul style="list-style-type: none"> <li>▪ The East marine plans have significant potential to support sustainable economic growth in the East of England marine plan areas.</li> </ul> |



| SA Topic                                     | Key Issues   | Key Opportunities   |
|--|--|---|
|  | <p>to energy and green technologies.</p> <ul style="list-style-type: none"> <li>▪ Given that some new activities will be specialised / capital intensive activities that demand highly specialised labour or capital equipment from regional, national and even international markets, there is a need to support industries that can minimise 'leakage', including through supporting local skills development.</li> <li>▪ In the shorter-term, there is also a need to support activities that will lead to employment with high local effects on labour utilisation, i.e. where labour catchments are relatively local, and there is demand for lower skilled labour, so creating jobs that are accessible for less well skilled workers who find themselves at increased risk of unemployment.</li> </ul>  |   |
| Geology, Geomorphology and Coastal Processes | <ul style="list-style-type: none"> <li>▪ Impacts at the coast have wider environmental and social implications, and are derived from both natural denudation process, and anthropogenic impacts including coastal defence and other coastal infrastructure (such as cable and pipe landfall, new port infrastructure) and sea-level change.</li> <li>▪ As coastal erosion and inundation in some areas may be uneconomic or undesirable to halt through engineering, the realignment of some coastal infrastructure and housing may be expected.</li> <li>▪ The loss of some of the coastal archaeological resource that cannot be studied prior to inundation and erosion may also be expected (for instance as recognised in SMP coastal cell policies).</li> <li>▪ Many of the coastal and estuarine environments in the East Inshore area are defined as heavily modified due to land reclamation, coastal and flooding defences, aggregate extraction, use for marine fisheries, and navigation and port activity. Heavily modified water bodies include those sites which have had their character or physical form greatly altered by anthropogenic activities. Work is underway in order to try and achieve good ecological potential (GEP) in such areas. In order to achieve GEP, mitigation measures set out for each water body by the EA need to be put in place.</li> <li>▪ The consideration of the resilience of proposed developments given present projections with regards to sea-level change, and their potential impact on sediment dynamics.</li> </ul> | <ul style="list-style-type: none"> <li>▪ The opportunity to consider a number of other relevant plans including River Basin Management Plans (RBMPs), SMPs, flood risk management and other existing coastal policies and initiatives (such as coastal change management areas), in planning decisions and in drafting the East marine plans.</li> <li>▪ The opportunity to consider the resilience of proposed developments given present projections with regards to sea-level change, and their potential impact on sediment dynamics, in keeping with the MPS.</li> </ul> |

| SA Topic               | Key Issues   | Key Opportunities   |
|------------------------|--|---|
| Landscape and Seascape | <ul style="list-style-type: none"> <li>▪ Offshore habitats have been impacted by human activity, including for instance historical land claim of intertidal sediments, damage or removal of subtidal rocky habitats by mobile fishing gears. Targets to help achieve Good Environmental Status (GES) under the MSFD have been drafted for seafloor integrity. Programmes of measures to achieve/maintain GES are yet to be put in place.</li> </ul> <hr/> <ul style="list-style-type: none"> <li>▪ The present and future leasing rounds of offshore wind are likely to see large numbers of larger turbines built in UK waters. Though the majority of the Round 3 wind zones are outside of territorial waters and therefore developments are unlikely to be greatly visible from the coast, views at sea and associated ancillary development (which may include additional port infrastructure and cable landfalls) for these wind farms and other marine renewables is likely in the coming years.</li> <li>▪ The Southern North Sea is also a prospective area for CCS and continuing gas field development (balanced to an extent by gas installation decommissioning), both of which will result in ongoing or incremental offshore and potentially also coastal development.</li> <li>▪ The Government believes that there is a compelling need for substantial additional port capacity over the next 20-30 years, which would be associated with a similar increase in vessel traffic.</li> </ul> | <ul style="list-style-type: none"> <li>▪ The opportunity to consider landscape and seascape in offshore development consent both for individual developments and as part of cumulative assessments, and to implement landscape character assessment in the consideration of such impacts where appropriate.</li> <li>▪ The ability to, where necessary, liaise with terrestrial planning authorities on seascape issues.</li> </ul> |
| Water Environment      | <ul style="list-style-type: none"> <li>• The potential effects of climate change on coastal flooding and erosion. A large portion of the east coast is vulnerable to flooding and erosion.</li> <li>• The effects of climate change on sea temperatures and ecology. An increase in sea temperature reduces the ability of oceans to absorb CO<sub>2</sub> affecting certain species thereby causing them to migrate or adapt.</li> <li>• The likely effects of ocean acidification on ecosystems and marine species.</li> <li>• Marine pollution derived from riverine, coastal and marine sources, and atmospheric emissions and subsequent deposition (such as metals, acidifying and eutrophying components from sewage and agricultural run-off) and pollutant legacies such as oil based cutting piles, munitions dumping and dredging disposal sites. While these issues are decreasing, there is a persistent legacy of some substances in industrial estuaries.</li> </ul>  | <ul style="list-style-type: none"> <li>• The Marine and Coastal Access Act and the MSFD provide new means by which important marine sites and ecosystem functions can be protected. The East marine plans should carry this forward into regionally specific proposals.</li> </ul>  |

**SA Topic****Key Issues****Key Opportunities**

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- Temporary effects in the water column from dredging and other activities which cause turbidity.
  - Coastal and marine litter and debris (such as from beach visitors, shipping litter and fishing related debris) is an aesthetic, ecological and economic problem.
  - A key driver for change is the WFD requirement (and forthcoming MSFD) to attain good ecological status in coastal waters (0 to 1nm) and chemical status within territorial waters (0 to 12nm).
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## 2.4 Consultation

### 2.4.1 Scoping Consultation

The scope of the SA was published as part of a broader Evidence and Issues Report<sup>16</sup> on 7 February 2012 following the consultation on the draft version of the report between 24 November 2011 and 10 January 2012. Consultation bodies were invited to provide comments on the scope and level of detail of the SA and the draft East marine plans. Responses were received from the following organisations:

- Norfolk County Council
- Wildlife and Countryside Link
- Norfolk Coastal Partnership
- Carbon Capture and Storage Association
- Kings Lynn and West Norfolk Borough Council
- North Yorkshire County Council
- Wash and North Norfolk Coast European Marine Site
- Suffolk Coast & Heaths Area of Outstanding Natural Beauty (AONB)
- Suffolk County Council
- Scottish Power Renewables
- Waveney District Council
- Suffolk Coastal District Council
- Marine Conservation Society
- Royal Society for the Protection of Birds (RSPB)
- The Wildlife Trusts
- Department for Energy and Climate Change
- Chamber of Shipping
- Joint Nature Conservation Committee (JNCC)
- Rijkswaterstaat (The Netherlands)
- Environment Agency
- RWE Npower Renewables Ltd
- National Trust
- Natural England
- Renewable Energy Association
- The Crown Estate
- Seabed Users and Developers Group
- Hull City Council

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<sup>16</sup> MMO (2012) Evidence and Issues Report for the East Inshore and East Offshore marine plan areas

The scope of the SA was subsequently revised and updated to reflect these comments as appropriate. The following general themes were covered:

- A number of further reports and studies were suggested by stakeholders and where significant these were reflected in the final report. In order to keep the length of the report to a minimum, a number of reports were mentioned in the revised version as points of further reference.
- Some respondents felt that a number of supplementary plans and strategies should be considered as part of the policy context. These were considered and referenced.
- A number of sustainability issues were raised and relevant ones were included in the revised report.
- Details of scoping comments can be obtained on request.

## 2.4.2 Role of the SA Advisory Group

The SA Advisory Group is a group, convened by the MMO, to informally advise on the approach, development and delivery of the SA. The terms of reference for the group are as follows:

- To provide a forum for discussion between the MMO, SA consultants, statutory consultees and other interested parties for SA (and marine planning)
- To provide a means of seeking informal advice from members of the advisory group for the MMO and SA contractors on, for example:
  - Overall approach
  - Data sources
  - Early versions of documents
  - To provide other advice and support as appropriate
- All advice and discussion is informal, in recognition of the fact that members of the group may want to (or may be required to) respond to formal consultations on the SA scoping report and final SA report

The composition of the group is as follows:

- Environment Agency
- Natural England
- English Heritage
- Joint Nature Conservation Committee
- Chamber of Shipping
- Wildlife and Countryside Link
- Seabed User and Development Group
- National Federation of Fishermen's Organisations
- Waveney District Council (as a social representative, rather than as a council)
- Defra

The group has met at key points in the process, in order to make meetings as useful and focused as possible. It is intended that the group will meet post-consultation, in order to discuss

consultation comments and proposed changes to the plans and SA, as part of the development of the SA Statement.

## 2.4.3 Consultation on this Report

The SA report was subject to a 3-month, formal, public consultation, alongside the draft East marine plans. Following this consultation the East marine plans and the SA were finalised, with the SA providing further input to changes to the East marine plans. Subsequently, a SA Statement will be published publicly that sets out (amongst other things): how this SA Report and responses received as part of the draft plan consultation have been taken into account when finalising the plan; explains the 'residual effects' of the plans, and also the measures that will be taken to monitor these effects. More detail on the next steps can be found in Chapter 6 of this report.

## 2.5 Appraisal Approach

### 2.5.1 Approach to Appraising Alternatives

Article 5(1) of the SEA Directive states:

*"..an environmental report shall be prepared in which the likely significant effects on the environment of implementing the plan or programme, and **reasonable alternatives** taking into account the objectives and the geographical scope of the plan or programme, are identified, described and evaluated"* (our emphasis).

The Practical Guide<sup>7</sup> advises that reasonable, realistic and relevant alternatives should be considered and they should be sufficiently distinct to enable a meaningful comparison of their different environmental effects. A number of strategic alternatives were identified by the MMO and a rationale provided for each one (the Directive requires an 'outline of the reasons for selecting the alternatives dealt with?').

These are identified and described in Section 3 together with an appraisal of the sustainability effects of each and a justification from the MMO as to why they have or have not been taken forward. Section 3 also includes an appraisal of two interim drafts of the draft East marine plans, undertaken in September and November 2012. In each case, recommendations were made to improve the sustainability performance of the plans which were subsequently incorporated into the final drafts.

The appraisal has evaluated the possible effects of pursuing the alternatives in relation to each of the eight SA topics. It is recognised that at this level there is less detailed information available about some of the alternative Options compared with the preferred draft East marine plans which contain a series of worked up policies. Indeed it would not be practicable to prepare a complete draft policy for each strategic alternative. Accordingly, a level of uncertainty has been acknowledged in the assessment.

For each topic, an appraisal score has been assigned relating to how the baseline characteristics are predicted to evolve following each of the strategic policy approaches. The notation used is described in Table 2-4. It should be noted that the appraisal of each option includes a No-Plan option that reflects the predicted baseline trends under that option. This differs slightly to the assessment of the draft marine plans (see below) which appraises the difference between the preferred plan and the No-Plan option.

Further detail on the development of alternatives is provided in Section 3.

## 2.5.2 Approach to Appraising the Draft East Marine Plans

The SA of the draft East marine plans focuses on the preferred plan policies proposed in the draft completed by March 2013. A version was also appraised in January 2014 which was the final version. The results of the January round of SA are not detailed specifically, however, the recommendations made at this time and how they were taken on board in the final marine plans are summarised under each topic.

It is a 'baseline-led' appraisal which considers how marine planning under the East marine plans will be different from marine planning under a 'business as usual' scenario (without the East marine plans but with a continuation of current policy). This appraisal asks 'how will environmental, social and economic conditions change under the East marine plans compared with 'business as usual'?

A qualitative approach was used comprising the appraisal and description of effects rather than a quantitative approach which is not considered appropriate or feasible at this strategic level, in view of the form and contents of the plans.

For each of the SA topics an appraisal table (example presented below) has been used to record anticipated impacts. In accordance with SEA Directive requirements, the table and the supporting commentary clarifies whether effects are positive, negative or neutral, whether they are permanent or temporary and, where relevant, the likely geographical and temporal scale of the effect. This is not completed for every policy individually, rather it seeks to appraise the plans as a whole. This is important as future consents will need to be judged against a suite of policies and not individual policies in isolation. Policies will need to be read together as they each cover different requirements. Whilst an overall assessment is given, an explanation of the appraisal is given in the discussion sections beneath the tables. Here the relative merits and disbenefits of individual policies are brought out more specifically.

Not all policies are relevant to all the SA topics. Consequently, prior to the appraisal, a high-level screening exercise was undertaken to identify which policies should be considered for each topic. The results of this are explained in Chapter 3 and Annex I. Only those policies screened in for each topic were appraised.

The notation used for the appraisal is presented in Table 2-4. The appraisal table also applies a measure of the current and future (without the East marine plans) baseline conditions for the topic. The colour coding for this is explained in Table 2-5.

**Table 2-3 Example of Appraisal Table**







|   |  |  |   |
|---|--|--|---|
| Relevant Marine Plan Objectives   | E.g. <b>Objectives</b> 1-5 .....                               |  |   |
| Relevant Marine Plan Policy Areas   | E.g. Section 5.4.1: Economic<br>.....                          |  |   |
| Relevant Marine Plan Policies   | <b>Policies which augment or provide new policy definition</b> | <b>Policies which reaffirm existing policy/planning mechanisms</b>   |   |
|   | E.g. SOC1, 4<br>.....  | .....  |   |
| Potentially Sensitive Receptors/ Receptor Groups                                      | E.g. Protected wreck sites and military remains<br>.....       |  |   |
| Current and future baseline conditions in absence of Draft East marine plans          | Current  | <ul style="list-style-type: none"> <li>▪ E.g.</li> <li>▪ The waters in the plan area are rich in heritage assets, ranging from prehistoric artefacts and former land surfaces now submerged to modern wrecks and the remains of WWII aircraft.</li> <li>▪ .....</li> </ul>   |   |
|   | Future   | <ul style="list-style-type: none"> <li>▪ E.g.</li> <li>▪ In the absence of actions to protect archaeological resources in the coastal and offshore zones it can be assumed that in areas other than those experiencing net sediment accretion, they will experience deterioration over time.</li> <li>▪ .....</li> </ul> |   |
| Likely changes in baseline conditions as a result of draft East marine plans adoption | <b>Within plans review period (to 2019)</b>                    | <b>Within currency of plans (to 2033)</b>  | <b>Beyond currency of plans (&gt;2033)</b>  |
|   |  |  | E.g.<br>The draft East marine plans largely reinforce existing policy with regard to activities and reaffirms the UK Government's commitment to environmental and heritage protection. However<br>..... |
| <i>Significance of change</i>   | E.g. +   |  |   |
| <i>Reversibility of change</i>  | E.g. R   |  |   |
| <i>Certainty</i>  | E.g. L   |  |   |
| Cumulative effects  | E.g.<br>With regard to the protection of heritage assets.....  |  |   |
| Uncertainties   | E.g.<br>With the exception of certain activities.....          |  |   |



Table 2-4 Notation Used for Appraisal

| Notation   | Description  |
|--|--|
| <b>Degree to which baseline conditions may change (significance of change) compared with the situation where no plans are produced</b> |  |
| <b>++</b>  | <b>Major Positive Effect</b><br>The draft East marine plans are likely to lead to significant improvements in baseline conditions.   |
| <b>+</b>   | <b>Minor Positive Effect</b><br>The draft East marine plans are likely to lead to some improvements in baseline conditions.  |
| <b>0</b>   | <b>Neutral Effect</b><br>The draft East marine plans are unlikely to alter baseline conditions significantly.  |
| <b>-</b>   | <b>Minor Negative Effect</b><br>The draft East marine plans are likely to lead to a deterioration in baseline conditions.  |
| <b>--</b>  | <b>Major Negative Effect</b><br>The draft East marine plans are likely to lead to a significant deterioration in baseline conditions.  |
| <b>+/-</b>   | <b>Positive and Negative Effect</b><br>The draft East marine plans are likely to lead to both a deterioration and an improvement in baseline conditions, perhaps in different areas or ways.   |
| <b>?</b>   | <b>Uncertain Effect</b><br>It is not known whether the draft East marine plans would lead to an improvement or deterioration in the baseline conditions.   |
| <b>Reversibility of effects</b>  |  |
| <b>R</b>   | It is considered that the effects upon the receptor group could be reversed if policy/activities were to change in the future. The receptor may hence be able to recover or indeed improvements could be diminished.                                       |
| <b>IR</b>  | It is considered that the effects upon the receptor group could not be reversed and would be permanent. This may apply to situations where, for example, features are destroyed for ever or systems/trends are irrevocably changed.                        |
| <b>Certainty of prediction</b>   |  |
| <b>H</b>   | There is a high level of confidence in the appraisal prediction.   |
| <b>M</b>   | There is a medium level of confidence in the appraisal prediction. This means that the appraiser is largely certain of the direction of impact and some of the elements of prediction but there remains some doubt or certainty about some other elements. |
| <b>L</b>   | There is low level of confidence in the appraisal prediction. This may be as a result of the policy being poorly defined, there being very little control over how an activity may come forward or there is limited evidence to support the prediction.    |

**Table 2-5 Colour Coding for Baseline Descriptions**

| Current baseline conditions in absence of the draft East marine plans             |   | Predicted future baseline conditions in absence of the draft East marine plans    |   |
|---|---|---|---|
|  | Current conditions are not particularly problematic   |  | Future conditions are expected to be better than current  |
|  | Current conditions are already problematic in only localised areas, or there is no agreed criterion for whether it is problematic |  | Future conditions are expected to be roughly the same as current, or some aspects are expected to get better and others worse |
|  | Current conditions are already problematic  |  | Future conditions are expected to be worse than current   |

The appraisal table also gives consideration to cumulative (including synergistic effects). This includes, inherently, a consideration of a multitude of activities occurring within the marine plan areas, as the East marine plan by definition covers a wide suite of activity. It also includes cumulative effects with plans or projects outside of the East marine plan areas. Further information is provided in section 4.11 summarising the cumulative effects across all topics.

Where relevant, the discussion also makes reference to effects in transboundary areas.

Following the discussion of appraisal results, a section is provided on recommended measures to mitigate or further enhance the marine plan policies. A table is provided in each case with recommended changes or additions to specific policies or for additional policies to be included.

## 2.6 Links to Other Assessments

### 2.6.1 Equalities Impact Assessment

SA Scoping took account of equalities issues – i.e. issues relating to discrimination and relations between different groups in society - with a view to potentially undertaking a stand-alone Equalities Impact Assessment (EqIA). The outcome of this equalities scoping are presented within Appendix C, which presents a consideration of the context, baseline and key issues under the broader heading of ‘Communities and Health’.

Subsequent to SA scoping, once the scope of the plan began to take shape, it was determined (through discussion with the SA steering group) that stand-alone EqIA was not necessary. Rather, it was appropriate to take into account equalities issues as necessary and appropriate through SA; specifically, when appraising the plan (and alternatives) in terms of sustainability issues under the topic of ‘communities and health’. This approach reflects the high level (i.e. non-spatially specific) nature of the plan and hence the minimal likelihood of significant effects in terms of the types of issue that would give rise to the need for standalone EqIA.

## 2.6.2 Habitats Regulations Assessment

Under Article 6(3) of the EU Habitats Directive<sup>17</sup> as transposed in the UK by the Habitats Regulations<sup>18</sup>, an 'Appropriate Assessment (AA)' needs to be undertaken in respect of any plan or project which:

- *Either alone or in combination with other plans or projects would be likely to have a significant effect on a Special Area of Conservation (SAC) or Special Protection Area (SPA) (within the marine area these are called European marine sites). They also include candidate SACs and Sites of Community Importance. It is Government policy that sites designated under the 1971 Ramsar Convention for their internationally important wetlands (Ramsar sites) and potential SPAs (pSPAs) are also included.*
- *Is not directly connected with or necessary to the management of the site e.g. a conservation plan.*
- This overarching process is referred to as Habitats Regulations Assessment (HRA) and has been undertaken in parallel to the SA and East marine plans' development. A separate HRA report<sup>19</sup> has been prepared which documents the process and findings of the HRA.

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<sup>17</sup> Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora

<sup>18</sup> Note, for territorial sea, the Conservation (Natural Habitats, &c.) Regulations 1994 apply in relation to Scotland (for non-reserved matters), the Conservation of Habitats and Species Regulations 2010 apply in relation to Scotland (for reserved matters), England and Wales, and the Conservation (Natural Habitats, &c.) (Northern Ireland) Regulations 1995 apply in Northern Ireland. For waters beyond the territorial sea subject to this SA the Offshore Marine Conservation (Natural Habitats, &c.) Regulations 2007 transposing the Habitats Directive in the UK offshore marine area (beyond 12 nautical miles) apply.

<sup>19</sup> MMO (2014) Habitats Regulations Appraisal of Draft East marine plans in English Waters: Appropriate Assessment

## 3 WHAT HAS PLAN-MAKING / THE SA INVOLVED TO-DATE?

### 3.1 Introduction

To comply with the SEA Directive, the SA Report must include ‘an outline of the reasons for selecting the alternatives dealt with’. What this means in practice is that, although only one report must be prepared – an SA Report for publication alongside the plan (i.e. this report) – there must be at least one earlier plan-making / SA iteration at which point alternatives are appraised and findings subsequently taken onboard by plan-makers. The SA Report must then ‘tell the story’.

Subsequent to the SA of alternatives there were two SA stages at which ‘working draft’ versions of the Plans were subjected to SA. Firstly, the ‘September 2012’ version of the draft plan was subjected to SA, with findings and recommendations fed back to the MMO. Secondly, the ‘November 2012’ version was similarly appraised. Appraisal findings and recommendations in relation to both working drafts are presented below.

Please note that an assessment of the draft marine plans was also undertaken in March 2013. This accompanied the draft plan for consultation in 2013. Following consultation feedback a number of changes were made to the marine plans which required further assessment through the SA process. Section 4 presents the findings of this further assessment which occurred in January 2014. It was decided not to reproduce the March 2013 findings again in this Final SA Report as the significant changes following consultation were relatively minor. Instead, the differences between March 2013 and January 2014 are clearly summarised under each assessment topic in Section 4.

### 3.2 Alternatives considered

The alternatives ‘dealt with’ should be ‘reasonable... *taking into account the objectives and geographical scope of the plan*’. As such, alternative approaches were identified by the plan-makers subsequent to the identification of plan objectives in May/June 2012.

The plan makers ruled out the possibility of spatially prescriptive plans (i.e. activity zoning) analogous to terrestrial plans at an early stage, because there was not the evidence, nor stakeholder consensus for a very prescriptive, zoned approach to marine planning (please see Box 3.1 for more information). Consequently it was considered that the main area where the plan could add value was to focus on the issue of ‘sectoral prioritisation’. Four alternative approaches were identified:

A) Emphasise support for wind (leading to more prioritisation of wind in Round 3 Zones – i.e. the areas most recently leased for offshore wind development - than is the case currently)

B) Emphasise support for co-location of wind with other activities in Round 3 Zones (i.e. more so than is the case currently / would be the case under a business as usual scenario)

C) Emphasise strong support for aggregates (i.e. maximum safeguarding for aggregates extraction across the marine plan area, including within Round 3 Zones)

D) Emphasise support for aggregates (i.e. maximum safeguarding for aggregates extraction across the East marine plans, other than within Round 3 Zones)

Box 3.1 discusses further the background to the selection of these alternatives

#### **Box 3.1: Background to the selection of alternatives**

The MMO's marine plan-making process utilises best practice and guidance from terrestrial planning. However, the two systems are not identical, particularly in terms of the range and issues they are concerned with. It is these issues which drive the Plan Options stage. The terrestrial planning system is concerned with a range of well-established issues, such as allocation of land for housing and transport provision and allocation of land for employment (i.e. for business). In terrestrial planning, the issues outlined above are identified as 'key issues' in all terrestrial plans and are often supported by individual studies that 'feed in' different numbers, ranges or goals to the Plan Options process. This process is largely driven by these 'key issues'.

The marine planning system differs in that all marine plans do not have this set of common 'key issues'. Different marine plan areas in England's marine area have different drivers and 'key issues', there is no parallel key issue compared to the example of 'housing' or 'transport' provisions. In addition the information that feeds into the terrestrial Plan Options process comes from a well established system where evidence and knowledge has built and developed over many years. As marine planning in England is in its infancy the availability of information of an equivalent extent and quality is much lower.

These factors resulted in the Plan Options process presenting a significant challenge. In order to define 'key issues' for the Plan Options process for the East marine plans the MMO concentrated on those key issues<sup>20</sup> that it was possible to define spatially (a key requirement of Plan Options) and that had an aspect that looked to the future (another key requirement of Plan Options) so that the likely change for those issues was able to be understood for the life of the plans. This led to a limited range of issues being addressed initially through the Plan Options process, with other issues subsequently being considered in terms of the impact of the initial Plan Options.

As part of the plan-making process, it was necessary to develop and test a series of (alternatives) Options. These Options were then appraised as part of the SA process. The methodology used by the MMO to identify Options prior to their appraisal focused on a set of key issues for the plans which had been identified through stakeholder engagement and interrogation of the evidence assembled for the plans. Over 60 issues were identified through the Evidence and Issues Report<sup>21</sup>, which were refined to a list of 13:

1. Co-location
2. Displacement (and other 'impacts' on 'receptor' activities)
3. Economic (growth)
4. Growth of renewables (particularly wind energy)
5. Future change/growth in aggregates
6. Cabling
7. Oil and gas
8. Seascape
9. Environmental concerns/MSFD
10. MPAs

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<sup>20</sup>Key issues were derived from both analysis of the evidence and engagement with stakeholders. More information on them can be found in the MMO's (2012) Evidence and Issues Report  
[http://www.marinemanagement.org.uk/marineplanning/areas/east\\_issues.htm](http://www.marinemanagement.org.uk/marineplanning/areas/east_issues.htm)

<sup>21</sup>[http://www.marinemanagement.org.uk/marineplanning/areas/east\\_issues.htm](http://www.marinemanagement.org.uk/marineplanning/areas/east_issues.htm)

11. Need for more evidence/research (need to relate this to MMO research programme and those of other organisations)
12. Planning approach – explanation of it and guidance
13. Sufficient focus on local issues or relevant local locations/‘hot spots’

The Options process used two of the key issues (those relating to offshore wind and aggregates) as the starting points for options generation. It focused on these as they were the only key issues that could be successfully and consistently expressed spatially (a requirement of the SEA directive); which had evidence available that projected future change relating to these issues; and where evidence existed to present a robust baseline for these issues. Other key issues, such as those pertaining to oil and gas extraction, were not able to be expressed in terms of their future development, as there was insufficient evidence available to project the location of suitable commercial gas resources and the potential nature of any related developments. As the plans look forward over 20 years, the future aspects of key issues were crucial to their use in Plan Options, because it was through the projected future change that choices could then be made about approaches to developing policies for all issues and sectors. For the other key issues listed above the future change and drivers were uncertain enough that they could not be used to drive the initial Options process, which focused on the development of offshore wind and aggregates.

Implications of the Options were looked at both by stakeholders through workshops, and by members of the MMO’s planning team. This was done in order to build up more information on the Plan Options and to think about the responses possible through planning to help address the implications. These responses then fed into plan policy development which was the next stage of the planning process.

Different approaches to the development of wind and aggregates were used as starting points for the Plan Options process, with four Plan Options developed (Options A-D). Plan Options A and B looked at different approaches to the development of offshore wind and Options C and D used different approaches to the development of the aggregates industry. Spatial analysis was undertaken to help illustrate the different implications of the Plan Options; these illustrations were used to help understand how the different Options may impact upon other activities (their implications).

The implications of the different Plan Options were looked at for the key issues listed above; so that each key issue was assessed for how the initial Options may differentially affect it. Some key issues were not affected by the Plan Options process, such as those relating to cabling, where industry practice and policy suggests that the only option is to bury cables wherever necessary and deal with individual applications, in terms of their spatial extent and implications for other uses of the seabed. Were evidence available during the Options process that suggested future cable routes, this could potentially have been factored into the Options process, but it was not available. It was possible to identify where cables may affect other key issues and then account for these effects through the policy responses developed from the Options process, for example by affording a level of consideration to aggregates resource when making decisions on activities that could sterilise the resource. Other key issues not affected also included key issues relating to further evidence requirements and how the East marine plans integrate with existing plans.

### 3.3 Reasons for selecting the preferred approach

In addition to being the subject of SA, these alternative approaches were also (concurrently) discussed with an SA Advisory Group comprising representatives of Natural England, Wildlife

and Countryside Link, Joint Nature Conservation Committee, EH, the EA, industry umbrella bodies and representatives of key local authorities.

Subsequent to receiving the findings of the SA, and discussion with the SA Advisory Group, the MMO was able to select a preferred approach to use as a basis upon which to prepare the draft East marine plans. The preferred approach draws primarily from Option B. Subsequent meetings with the SA Advisory Group were convened through the plan making and SA process.

SA findings are presented in Appendix J, and summarised in Box 3.2. The MMO's reasons for selecting the preferred approach are summarised in Box 3.3.

### Box 3.2: Summary of SA findings in relation to the alternatives considered

The judgement was made that Option A would probably mean an increase in offshore wind energy development (compared to the baseline), whilst Option B would result in the 'roll-out' being hindered somewhat. In terms of Options B and C, the expansion of the aggregates industry has implications for some (environmental) SA topics, but not all. The SA has also taken into account the fact that more (Option A) or less (Option B) wind farm development and more (Options C and D) aggregates extraction could have knock-on implications for other sectors; however, the effect to other sectors is uncertain, as are any knock-on implications for sustainability issues.

The following is a high-level summary of SA findings in relation to the options considered. Detailed SA findings are presented within Appendix J.

| SA Topic  | Option A<br>(Support for<br>wind) | Option B<br>(Support for co-<br>location) | Option C (Strong<br>support for<br>aggregates) | Option D (Support<br>for aggregates) |           |
|---|-----------------------------------|---|--|--------------------------------------|-----------|
| Air and Climate                                 | +                                 | 0   | ▪  | 0 ▪ 0                                |           |
| Communities and Health                          | +                                 | 0   | ▪  | 0 ▪ 0                                |           |
| Cultural Heritage                               | 0/-                               | 0/-                                       | ▪  | 0/- ▪ 0/-                            |           |
| Marine<br>Ecology                               | Plankton                          | 0   | ▪  | 0 ▪ 0                                |           |
|   | Benthos                           | 0/-                                       | 0/-  | - ▪ -                                |           |
|   | Fish and Shellfish                | 0   | 0  | ▪                                    | 0/- ▪ 0/- |
|   | Cephalopods                       | 0   | 0  | ▪                                    | 0 ▪ 0     |
|   | Birds                             | 0/-                                       | 0/-  | ▪                                    | 0/- ▪ 0/- |
|   | Marine Mammals                    | 0/-                                       | 0/-  | ▪                                    | 0/- ▪ 0/- |
| Economy   | +                                 | 0   | ▪  | 0 ▪ 0                                |           |
| Geology, Geomorphology and<br>Coastal Processes | 0                                 | 0   | ▪  | 0 ▪ 0                                |           |
| Landscape and Seascape                          | 0/-                               | 0/-                                       |  | 0/- ▪ 0/-                            |           |
| Water Environment                               | +/-                               | +/-                                       | +/-  | +/-                                  |           |

### Box 3.3: Summary reasons for selecting the preferred approach

In deciding upon which Plan Option to choose, the MMO undertook an internal analysis that looked at the implications of the Plan Options for different sectors and environmental issues, using information from the



Options appraisal undertaken as part of the SA process.

The MMO selected Option B, plus the spatial extent of aggregates resource areas from Option C, based upon the findings above, but also upon work undertaken in assessing the Options internally to see which would meet the plan objectives best and address national and local policy.

It was considered that Option B met policy objectives across government more fully than the other Options, because of its emphasis on addressing other issues as well as offshore wind. This option better represented the needs of a wider cross section of sectors including shipping and fishing. It holds the potential to have a minor positive effect on the economy topic through the support across sectors, but was assessed as not being likely to significantly alter the other topics represented in the baseline. Further analysis and evolution of the plans informed by the SA process, led to the inclusion of some positive economic aspects of Option A, presenting a more positive economic picture. This support for offshore wind was assessed as not being in conflict with the supportive policies for other sectors represented under Option B. It also does not have a differential effect on environmental and social topics than Option A, thereby ensuring no negative impact for those topics. Section 4.2 and chapter 5 reflect how the plans have developed since this initial appraisal of the Plan Options.

## 3.4 Appraisal of First Draft East Marine Plans September 2012

Following the consideration of strategic alternative Options an initial draft of the East marine plans was produced. This was subject to the SA process and a series of recommendations were made under each SA topic to amend the document by means of mitigation and/or enhancement. The findings of this interim SA are summarised below.

The recommendations were reviewed by the MMO plan-making team and an outcome for how they were taken forward to the next iteration of the plan is also presented. It should be noted that any references to policy names or numbers, or objective numbering, relates to the plans as they stood at the time and are not necessarily the same as those used in the preferred draft in March 2013.

### 3.4.1 Summary of Appraisal Findings

#### Air and Climate

**Table 3-1: Summary of SA Findings for Air and Climate - First draft East marine plans September 2012**

| Relevant Marine Plan Policies from First draft East marine plans | Policies which augment or provide new policy definition |   | Policies which reaffirm existing policy/planning mechanisms |  |
|--|---|---|---|--|
|  | SOC4  | EV1-6,                                    | EC3,  |  |
|  | CC2   | CCS1, 3                                   | ECO1, 3   |  |
|  | GOV1-5, 7   | WIND2, 3                                  | WIND1   |  |
|  | ECO1, 3   | TIDE1                                     | CCS1, 3   |  |
| Likely changes in baseline conditions as a result of draft       | <b>Within plans review period (to 2019)</b>             | <b>Within currency of plans (to 2033)</b> | <b>Beyond currency of plans (&gt;2033)</b>                  | The Plan is expected to lead to greater deployment of offshore wind in the East Plan areas than would be the case under the baseline scenario. In the long term, support |



|                                |           |          |          |  |
|--------------------------------|-----------|----------|----------|--|
| East marine plans adoption     |           |          |          | and encouragement for wind energy in the East Plan areas should help to ensure that electricity generation from renewable sources will increasingly replace energy generation from fossil fuels.           |
| <i>Significance of Effect</i>  | <b>0</b>  | <b>+</b> | <b>+</b> |  |
| <i>Reversibility of change</i> | <b>NA</b> | <b>R</b> | <b>R</b> | In terms of other climate change mitigation initiatives, the plans are less likely to have a significant effect. Similarly, the plans are unlikely to lead to significant effects in terms of air quality. |
| <i>Certainty</i>               | <b>H</b>  | <b>M</b> | <b>M</b> |  |

## Discussion

The Plans include policies focused on offshore renewable wind energy, CCS and tidal stream technologies. There is also a 'Climate Change' policy focused on ensuring developments minimise greenhouse gas emissions and do not affect emissions from other marine activities (e.g. as a result of shipping routes becoming displaced and hence lengthened).

Importantly, one of the three 'Economic' policies is dedicated to ensuring that wind energy proposals are considered favourably with a view to achieving 'the Plan's vision for the East Plan Areas to be at the forefront of the rapidly developing industry of offshore wind generation'. This policy complements the three 'Wind' focused policies and the effect will be to give confidence to developers that the plan areas are suitable areas to invest in offshore wind.

This is positive from a perspective of supporting the achievement of established national carbon reduction targets. In the long term, support and encouragement for wind energy in the East Plan areas should help to ensure that electricity generation from renewable sources will increasingly replace energy generation from fossil fuels. In the shorter term, however, the effect could be to encourage offshore windfarm developers to invest in the East Plan areas at the expense of investing in another area.

In terms of CCS and tidal stream technologies there is less of a policy emphasis, but it should still be the case that a useful policy framework is put in place that will help to ensure that the potential to roll-out these activities is not unduly foreclosed. In terms of CCS in particular, it is important that the 'option' of early adoption is not foreclosed given that CCS could potentially make a major contribution to climate change mitigation. This 'potential' is highly uncertain given that the first CCS demonstration project in the UK is yet to be completed.

Regarding air quality, the Plans do seek to ensure increased economic activity at sea and along the coast, which could contribute to localised air quality problems or worsen air quality in areas where it is already a problem. This could particularly be the case around the major ports (which are centres of activity that the Plan seeks to protect through a dedicated policy). However, it is not possible to determine likely significant effects with any certainty.

**Table 3-2: Summary of SA Recommendations for Air and Climate - First draft East marine plans September 2012**

| <b>Policy</b> | <b>Mitigation/Enhancement Recommendations</b>   | <b>Outcome for draft East marine plans</b>  |
|---------------|---|---|
| PS2,3         | Policy wording in relation to Ports and Shipping could recognise the importance of shipping as a relatively low carbon mode of transporting heavy freight.  | The following supporting text has been added within the 'Ports and Shipping' section:<br><i>This has the benefit of reducing carbon emissions from freight transport and freeing up road and rail capacity, supporting the Climate Change mitigation objective of these marine plans.</i> |
| All           | There should be additional policy reference to the importance of ensuring that development does not lead to worsened air quality, particularly in areas where air quality is an existing problem. | The MMO feel that air quality issues are suitably addressed via 'signposting' under objective 6 - 'To ensure a healthy, resilient and adaptable marine ecosystem in the East Plan areas'. Specifically, the text states that:<br><i>Development and other activities in the marine</i>    |

| Policy | Mitigation/Enhancement Recommendations | Outcome for draft East marine plans  |
|--------|--|--|
|        |  | <i>and coastal area can have adverse effects on air quality at various stages. The MPS<sup>22</sup> (2.6.2) states that marine plan authorities should be satisfied that air quality impacts have been taken into account in developing marine plans, liaising with terrestrial authorities particularly in relation to Air Quality Management Areas (AQMAs; see supporting map booklet). There are 11 AQMAs adjacent to the East Inshore Area, most declared for nitrogen dioxide.'</i> |

## Communities and Health

**Table 3-3: Summary of SA Findings for Communities and Wellbeing - First draft East marine plans September 2012**

| Relevant Marine Plan Policies from First draft East marine plans                      | Policies which augment or provide new policy definition |   | Policies which reaffirm existing policy/planning mechanisms |  |
|---|---|---|---|--|
|   |   | SOC1, 4<br>CC1, 2<br>FISH1, 2             | TR1-4<br>GOV1- 5, 7<br>EV1-6                                | EC1, 2<br>SOC2 - 3<br>ECO2, 3  |
| Likely changes in baseline conditions as a result of draft East marine plans adoption | <b>Within plans review period (to 2019)</b>             | <b>Within currency of plans (to 2033)</b> | <b>Beyond currency of plans (&gt;2033)</b>                  | The draft East marine plans should have a positive effect as a result of targeted efforts to stimulate economic activity that, in turn, will benefit communities in need of regeneration. Also, the Plans set out policies that will ensure economic activities currently of importance from a community perspective are protected, including fishing. |
| <i>Significance of effect</i>   | <b>+</b>  | <b>+</b>                                  | <b>+</b>  |  |
| <i>Reversibility of change</i>  | <b>R</b>  | <b>R</b>                                  | <b>R</b>  |  |
| <i>Certainty</i>  | <b>L</b>  | <b>M</b>                                  | <b>M</b>  |  |

### Discussion

The draft East marine plans are focused on promoting and supporting economic activities that will not only build on the existing strengths of coastal communities adjacent to the plan areas, but will also address particular problems being faced. The importance of supporting employment opportunities that meet the needs of localities close to the plan areas is reflected. Also, policies are dedicated to supporting the fishing and tourism sectors, both of which are vital from a perspective of maintaining employment for all, including those with lower levels of education or skills that might otherwise be at risk of unemployment.

The supportive policies relating to wind in the plans means that the majority of this economic benefit will be realised by businesses associated with the offshore windfarm sector. It is anticipated that growth in the wind energy sector will benefit communities, including communities in need of regeneration around the Humber Estuary and at Great Yarmouth /

<sup>22</sup> HM Government (2011) UK Marine Policy Statement

Lowestoft.

Amongst the 'Social' policies there is one that sets out to encourage activities that will have the effect of diversifying tourism and expanding the season. This could result in significant benefits given that socio-economic deprivation is prevalent in several of the traditional seaside towns along the coastline. Other social policies reflect the importance of recreational uses, protection of heritage assets and protection of seascapes, respectively.

Finally, it is important to note that a 'climate change' policy is dedicated to ensuring that due consideration is given to climate change adaptation considerations. This could have important implications for community and wellbeing in the long term.

**Table 3-4: Summary of SA Recommendations for Cultural Heritage - First draft East marine plans September 2012**

| Policy                           | Mitigation/Enhancement Recommendations   | Outcome for draft East marine plans   |
|----------------------------------|--|---|
| EC2 and sector specific policies | The marine plan, to the extent possible, should seek to influence the approach to procurement, skills development, and recruitment in order to maximise local capture of economic benefits and employment.   | The issue of supply chain is appropriately covered through Policy EC2.  |
| CC1                              | Climate change adaptation planning should be implemented that gives particular attention to improving the resilience of vulnerable coastal communities and households, recognising age disability, health and income as key indicators of vulnerability. | No change made. This approach would be out of step with the EA approach to assessing risk and implementing management approaches to climate change risks at the coast (coast flooding in particular). |

## Cultural Heritage

**Table 3-5: Summary of SA Findings for Cultural Heritage - First draft East marine plans September 2012**

| Relevant Marine Plan Policies from Second draft East marine plans                     | Policies which augment or provide new policy definition |  | Policies which reaffirm existing policy/planning mechanisms |   |
|---|---|--|---|---|
|   |   | SOC1, 4<br>GOV1-5, 7<br>EV1-6<br>CCS3<br>WIND2-3 | TIDE1<br>CAB1<br>AGG1, 3<br>FISH1<br>AQ1<br>TR1-2           | EC3<br>SOC3<br>BIO1<br>GOV1,4<br>CCS3   |
| Likely changes in baseline conditions as a result of draft East marine plans adoption | <b>Within plans review period (to 2019)</b>             | <b>Within currency of plans (to 2033)</b>        | <b>Beyond currency of plans (&gt;2033)</b>                  | Offshore wind development and aggregates extraction may increase slightly (although this is uncertain) as a result of draft East marine plans adoption notably in known areas of heritage potential (e.g. Dogger Bank). An increase may result in greater effects on heritage assets although strong new policy (especially SOC3) would help to mitigate and or avoid this. However, this is uncertain and it is not possible to say that one effect would balance the other. |
| <i>Significance of change</i>   | <b>+/-</b>  | <b>+/-</b>                                       | <b>+/-</b>  |   |
| <i>Reversibility of change</i>  | <b>R</b>  | <b>R</b>   | <b>R</b>  |   |

---

Certainty

L

L

L

Consequently, both positive and negative effects have been assigned relative to the as to the business as usual.

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## Discussion

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The draft East marine plans contain policies which both provide protection to heritage assets and also promote activities which may result in harm to heritage assets. Many of these re-affirm existing policy such as, for example, those relating to the on-going role of the oil and gas industry but some promote further development of offshore wind and aggregates extraction. Some augment existing policy such as those which seek to avoid sterilisation of tidal power potential and fishing grounds and policy CAB1 which encourages the burying of cables within the seabed. All of these activities have potential to harm heritage assets and it may be that an increase in offshore wind and aggregates extraction (potentially in areas of known heritage interest such as the shallow sand banks) may result in greater harm to heritage assets than without the plans. However, controls are already in place to protect heritage assets which would continue, for example, the requirement for project-level Environmental Impact Assessments (EIAs), legal protection for some wrecks and military remains, existing guidance on heritage for the aggregates industry and guidance on cumulative effects for wind energy developments. It is also not certain whether the plans would, in fact, result in an increase in offshore wind development. It should also be identified that other potentially damaging industries such as ports and shipping may decline slightly. Furthermore, the draft East marine plans contain a number of policies which either directly or indirectly offer protection to heritage assets. Principally, SOC3 makes specific provision for consideration of heritage assets including respecting culture, character and conservation. Authorities should presume against development which could result in substantial harm to heritage assets unless there is a clear and convincing need for the development. Other policies offer indirect heritage protection through consideration of other things such as BIO1 regarding marine ecology, SOC3 regarding recreation and tourism and SOC4 regarding landscape and seascape. GOV5 reiterates the need for EIA where applicable and GOV7 seeks to ensure that the impacts of displacement of activities are also considered. Policies EV1-6 all relate to the need to improve the gathering, sharing and monitoring of evidence to support development, together with partnering to help achieve this; all of which would greatly help our understanding of the marine historic environment.

On balance, therefore, it is considered that whilst the draft East marine plans may encourage further offshore wind (albeit uncertain) and aggregates development, it does include a number of policy measures to protect heritage, some of which go slightly beyond existing policy mechanisms or at least help to re-assert them in this context. As such the draft East marine plans are considered to have a neutral effect on the heritage baseline compared with the situation without the draft East marine plans.

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**Table 3-6: Summary of SA Recommendations for Cultural Heritage - First draft East marine plans September 2012**

| <b>Policy</b> | <b>Mitigation/Enhancement Recommendations</b>  | <b>Outcome for draft East marine plans</b>   |
|---------------|--|--|
| SOC2          | Consideration should be given to the environmental impacts of land-based allocations and decision-makers should seek to avoid significant impacts where possible.  | Text included under TR4 "All new licences are likely to be subject to project-level assessment including EIA and Coastal Impact Study to ensure any tourism or recreation opportunities does not have a negative impact on existing features". |
| SOC3          | SOC3 could be strengthened by inclusion of the following: reference to the provisions of the Valletta Convention on the value of undesignated heritage; a definition of heritage assets to include designated assets such as SAMs, protected wrecks and military remains, submerged marine palaeo-landscapes, coastal assets such as listed buildings, registered historic parks and gardens, important archaeology; | This is mentioned in the MPS and not included only to avoid duplication.   |

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| Policy               | Mitigation/Enhancement Recommendations   | Outcome for draft East marine plans  |
|----------------------|--|--|
|                      | and, the setting of such assets. Reference could also be made to the emerging research and methodologies into sensitivity analysis for submerged palaeo-landscapes funded by the Aggregates Levy.  |  |
| GOV2                 | In addition to the need for terrestrial planners to provide appropriate allocation for onshore infrastructure associated with marine activities, reference should be made to the need for the impacts of associated onshore activities to be avoided and/or mitigated through appropriate site selection, design and impact assessment. Promotion of a collaborative approach between on and offshore planners could be reiterated here. | This is now covered in GOV2 and associated text.   |
| CAB1                 | CAB1 should include provision for assessing the impact on heritage assets of burying cables prior to laying and burial. Routing and burial options should consider the need to avoid significant adverse effects on heritage assets.   | Adding this additional text would not add value to the marine plan as the assessment or check for heritage assets already exists as part of the licencing and lease processes with MMO/TCE.  |
| Aggregates policy    | This would be strengthened by reference to the existing environmental protocols employed by the aggregates industry, notably the BMAPA guidance with respect to heritage.  | Considered, but trying to avoid signposting.   |
| Offshore wind policy | This would be strengthened by reference to the existing COWRIE guidance on cumulative impacts assessment.  | WIND3 sets out the requirements for applications brought forward from non-leased areas. There is reference in the context and signposting to the SEA2 which has assessed numerous cumulative impacts including environmental and social impacts of a programme of wind development. We have also stated that projects will still be required to complete project level assessments. cumulative effects are specifically referenced in ECO1 but this referenced the RenewableUK report which is expected to supercede COWRIE. |
| Ports policy         | Port development has potential to have significant impacts on heritage assets. The policies currently focus on navigation issues. It is proposed that a cross-reference to the provisions of SOC3 be included within this section, otherwise a links to an amended GOV2 as proposed above.   | Text added to context referring to cultural heritage at ports and referring to SOC2 (previously SOC3).   |

## Marine Ecology

**Table 3-7: Summary of SA Findings for Marine Ecology - First draft East marine plans September 2012**

| Relevant Marine Plan Policies from First draft East marine plans | Policies which augment or provide new policy definition |         | Policies which reaffirm existing policy/planning mechanisms |         |
|--|---|---------|---|---------|
|  | ECO1  | WIND2,3 | EC3   | WIND1-3 |

|         |            |         |        |
|---------|------------|---------|--------|
| BIO2    | TIDE1      | ECO1-3  | AGG2   |
| MPA1    | CAB1       | BIO1    | DEF1   |
| CC1     | AGG1, 3, 4 | CCS2, 3 | DD1, 2 |
| GOV1-6  | FISH1, 2   | OG1, 2  |        |
| EV1-6   | AQ1        |         |        |
| CCS2, 3 |            |         |        |

| Likely changes in baseline conditions as a result of draft East marine plans adoption | Within plans review period (to 2019) | Within currency of plans (to 2033) | Beyond currency of plans (>2033) | In many instances policy wording reflects those existing measures which are in place, and these are regarded as having a neutral effect on baseline conditions.<br><br>Sector specific policies in some instances safeguard areas for activities (e.g. CCS, tidal energy, aggregate extraction, offshore wind) and therefore present the potential for activity displacement (e.g. fishing) – offshore wind development and aggregates extraction may increase slightly as a result of draft East marine plans adoption. The degree to which displacement could generate irreversible effects on marine ecology cannot be defined with any certainty. Considered in combination with other objective level (e.g. GOV1, GOV3, BIO1) and activity specific (e.g. FISH1, FISH2) policies, decision makers should consider these implications and provide suitable safeguards against this on a case by case basis (subject to an evolving evidence base – e.g. under EV1).<br><br>On balance, policies and supporting context/justification may augment existing policy and planning considerations during the life of the plans, for instance by enhancing the consideration and guidance in relation to cumulative effects, and by assisting in promoting and commissioning research in areas for which there are knowledge gaps, and promoting the transparent exchange of information. |
|---|--------------------------------------|------------------------------------|----------------------------------|---|
| <i>Significance of change</i>   | <b>0</b>                             | <b>+</b>                           | <b>+</b>                         |   |
| <i>Reversibility of change</i>  | <b>NA</b>                            | <b>R/IR</b>                        | <b>R/IR</b>                      |   |
| <i>Certainty</i>  | <b>H</b>                             | <b>M</b>                           | <b>L</b>                         |   |

## Discussion

Many of the considerations assigned to decision makers by the draft plans policies reflect existing policy level protection of water quality and sites and species of conservation interest. Policies in the draft plans have the potential to enhance present protection measures through ensuring that cumulative effects and good design are taken account of or encouraged respectively. With regards to the former, though cumulative effects are generally considered in project level EIA (e.g. in relation to hydrocarbon activities or offshore wind farms), the MMO promote the use of the latest available guidance, on which the decision maker (assumed to be the relevant authority) can provide advice. When considered in combination with policies designed to help enhance the evidence base (EV1-6 with cumulative effects highlighted as a

priority area in the MMO Strategic Evidence Plan), the plans may increase the understanding of potential effects and methods used by applicants and decision makers in consenting. The plans are in keeping with the MPS<sup>23</sup> with regards to encouraging activities which have the potential to “enhance” benefits to marine ecology, i.e. incorporating elements of design which seek to have a positive effect on the marine environment rather than ones which have a neutral or minor negative effect.

The plans contains policy which places a requirement on decision makers to consider how activities between or outside of Marine Protected Areas (MPAs) might compromise the delivery of an “ecologically coherent network of MPAs”. In combination with policy which largely reiterates the MPS and existing provisions for habitat and species conservation (for instance statutory protection of certain sites and species), the plans may assist in protecting mobile species which range outside site boundaries, and also the habitats beyond site boundaries that they may rely on (e.g. as foraging areas).

It is uncertain as to the possible effects that activity displacement (particularly fishing) could generate during the life of the plans, particularly if offshore wind and aggregates expand as a result of provisions in the plans; however policies such as those specifically related to the fishing industry could help in assessing these impacts at the project level. Such policy could more explicitly tackle the possible environmental issue of displacement to different receiving environments rather than just the socio-economic issue of movement from existing grounds. The implementation of policies including those which seek to improve the consideration of cumulative effects and promote the development which enhance benefits to marine ecology (discussed above), in combination with existing environmental protection measures and other targets which are forthcoming (e.g. through the MSFD), can contribute to the provision of a high level of protection for marine ecology, and has the potential to result in a minor positive change in baseline conditions. Though such changes may not be evident in the immediate term or within the first review period (by 2019), in the medium-term the contribution of marine planning may be more apparent and will be reflected in the draft East marine plans’ monitoring plan, and in those indicators suggested in this SA.

**Table 3-8: Summary of SA Recommendations for Marine Ecology - First draft East marine plans September 2012**

| <b>Policy</b>   | <b>Recommendation for mitigation/enhancement</b>  | <b>Outcome for draft East marine plans</b>   |
|-----------------|---|--|
| AQ1             | There is no specific reference to shellfish waters being replaced by WFD protected areas in 2013. Though this will not make any difference to the level of protection, it would maintain the currency of plan’s wording for a longer period.  | Addition made to the Aquaculture context text.   |
| FISH1,<br>FISH2 | These policies largely protect fishing interests through a requirement to consider how activities may affect access to grounds and the quality of fish spawning and nursery areas. While FISH2 may have associated benefits for seabed habitats, FISH1 could more explicitly tackle the possible environmental issue of displacement to different receiving environments rather than just the socio-economic issue of movement from existing grounds. These policies may benefit from any new information gathered/made available through policies EV1-6. | Displacement is picked up by GOV4 policy as it is a wider issue than just fishing. Evidence is highlighted in the context text for these policies. |

<sup>23</sup> HM Government (2011) UK Marine Policy Statement



## The Economy

**Table 3-9: Summary of SA Findings for the Economy - First draft East marine plans September 2012**

| Relevant marine plan Policies from First draft East marine plans | Policies which augment or provide new policy definition |        | Policies which reaffirm existing policy/planning mechanisms |          |
|--|---|--------|---|----------|
|  | CCS1-3  | SOC1   | EC1-3   | AGG2     |
|  | WIND2   | GOV1–5 | OG1, 2  | SOC2 – 3 |
|  | AGG1, 3   | GOV7   | WIND1, 3  | CCS1-3   |
|  | FISH1, 2,   | EV1-6  |   |          |
|  | TR1– 4  | PS1    |   |          |

| Likely changes in baseline conditions as a result of draft East marine plans adoption | Within plans review period (to 2019) | Within currency of plans (to 2033) | Beyond currency of plans (>2033) |  |
|---|--------------------------------------|------------------------------------|----------------------------------|--|
| <i>Significance of effect</i>   | <b>+</b>                             | <b>+</b>                           | <b>+</b>                         | The draft East marine plans will result in targeted economic activity that will help to bring about employment focused regeneration within particular communities where there are currently identified problems. It is not anticipated that any particular economic activities / local economies will suffer as a result of the plans. |
| <i>Reversibility of change</i>  | <b>R</b>                             | <b>R</b>                           | <b>R</b>                         |  |
| <i>Certainty</i>  | <b>L</b>                             | <b>M</b>                           | <b>M</b>                         |  |

### Discussion

The Plans are supportive of a range of sectors, particularly those relating to energy, such as offshore wind. It is notable that wind energy is the only economic sector given prominence in the overarching 'Economy' Policies and that issues relating to the efficient roll-out of wind energy are given detailed consideration through dedicated policies. While there is some uncertainty over the exact timeframe for offshore wind development it is anticipated that the industry will grow significantly during the plan period, including as a direct result of the Plan, thus contributing significantly to the achievement of local, regional and national economic objectives.

Wind energy is important, but growth in this sector alone will not enable all identified economic issues associated with localities along the coastline to be addressed; and, furthermore, there is the potential for wind energy to conflict with other activities in such a way that results in existing problems associated with particular localities being worsened. As such, the draft East marine plans also give other sectors support through policy. Sector specific policies vary in their detail, reflecting the nature of the evidence base available. For example, detailed policies are set out in relation to Aggregates (which give separate consideration to 'aggregates sites subject to exploration agreements', 'aggregates sites subject to extraction license' and 'aggregates sites of high potential resource') whereas less detailed policy is set in relation to fishing (referring only to the need to protect 'areas of fishing activity').

As well as helping to ensure that fresh problems do not arise, the likely outcome of setting various sector specific policies is that the Plans will provide a platform for reduced conflicts / more efficient cooperation between sectors. This outcome should help to ensure a diverse economic base and that economic opportunities can be realised; however, there is inherent uncertainty given that marine planning of this nature is relatively uncharted territory.

**Table 3-10: Summary of SA Recommendations for the Economy - First draft East marine plans September 2012**

| Policy | Mitigation/Enhancement Recommendations             | Outcome for draft East marine plans          |
|--------|--|--|
| FISH   | Include a particular policy focus on ensuring that | Rather than writing a ports/fishing specific |



| Policy | Mitigation/Enhancement Recommendations  | Outcome for draft East marine plans  |
|--------|---|--|
|        | particular ports, and small businesses associated with particular ports, do not lose business as a result of fishing grounds and shipping routes being displaced.   | displacement policy, the displacement policy in GOV4 addresses those wider issues than just fishing to reduce repetition etc.                              |
| EC3    | This policy could also include specific reference to other renewable and low carbon technologies, rather than solely focus on offshore wind. The potential for a spatial focus could also be explored.  | This policy is about the activity with the most potential to be transformational during the life of the plans, which has been assessed to be offshore wind |
| EC3    | This policy could be strengthened by reference to supporting a 'sustainable' offshore wind industry which places climate change mitigation at its centre, and recognises the potential air quality and climate impacts of associated developments, particularly in areas with existing air quality issues | Reference to the importance of growth in the wind energy sector being 'sustainable' has now been added.  |

## Geology, Geomorphology and Coastal Processes

**Table 3-11: Summary of SA Findings for Geology, Geomorphology and Coastal Processes - First draft East marine plans September 2012**

| Relevant Marine Plan Policies from First draft East marine plans                      | Policies which augment or provide new policy definition |                                    | Policies which reaffirm existing policy/planning mechanisms |   |
|---|---|------------------------------------|---|---|
|   |   | BIO2                               | CCS1, 2   | EC3   |
|   | MPA1  | CAB1                               | ECO1, 3   | WIND1-3   |
|   | CC1   | TIDE1                              | BIO1, 2   | AGG2  |
|   | GOV1-6  | WIND2, 3                           | GOV1, 4   | CCS3  |
|   | EV1-6   | FISH1, 2                           | CCS1-3  | DD1, 2  |
|   | AGG1, 3, 4  |                                    |   |   |
| Likely changes in baseline conditions as a result of draft East marine plans adoption | Within plans review period (to 2019)                    | Within currency of plans (to 2033) | Beyond currency of plans (>2033)                            |   |
| <i>Significance of change</i>   | 0   | +                                  | +   | Policy provisions in the draft East marine plans largely confirm or reinforce existing policy measures, though in some circumstances provide for safeguards or considerations (by decisions makers and applicants) which could assist in protecting geological or geomorphological interests, or those which are relevant to particular activities (e.g. CCS).  |
| <i>Reversibility of change</i>  | NA  | R                                  | R/IR  |   |
| <i>Certainty</i>  | H   | M                                  | L   | Though it is not regarded that the draft East marine plans augment existing policy or development control mechanisms to such a degree that they will generate a significantly different outcome for geology, substrates or coastal processes during the life of the plans, they will assist in implementing provisions of the MPS (e.g. through CC1) and may also contribute to better interactions between terrestrial and marine decision makers for developments |

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which may have an intertidal/coastal impact.

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## Discussion

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The draft East marine plans set out a range of policies of relevance to this SA topic, whether they be in relation to the avoidance of damage to MPAs selected wholly or in part for geological or geomorphological features, or whether they seek to influence activities which may generate direct physical effects on seabed features (e.g. aggregates extraction, renewables installation, cable and pipeline installation). With regards to the former, policies related to the protection of designated sites and, “habitats and other species of principal importance for the conservation of biodiversity; and to geological interests within the wider environment”, are covered by existing requirements. Equally, reference is made to the WFD and MSFD and related descriptors, which include targets for achieving Good Ecological/Environmental Status (GES) or Potential (GEP) for morphological criteria. While the plans will take account of evidence collated from MSFD monitoring programmes, it is expected that this will inform future marine planning – there is no specific policy which relates to how the plans will assist in delivering MSFD and WFD targets (other than in potentially assisting in developing the evidence base through, amongst other things, its Strategic Evidence Plan), and it is expected that this may be a consideration of later iterations of the plans.

Many of the policies reaffirm or complement existing national scale policy (e.g. as contained in the MPS, NPSs, NPPF) and non-statutory plans (e.g. SMPs). Policies which augment existing provisions include those for offshore wind, CCS, aggregates extraction, and tidal energy, which effectively safeguard areas of potential resource against activities which could preclude future activity in these sectors. In combination, should these policies assist in the deployment of CCS and renewables technologies and the maintenance of a supply of aggregates which include material that may be used in beach recharge; they could assist in climate change adaptation and CO<sub>2</sub> reduction (though only in combination with wider initiatives) and the transition to a lower carbon energy mix for the East marine plans areas. Any additional wind capacity or aggregate extraction will have corresponding environmental implications for the seabed, though considered in combination with other provisions of the draft East marine plans (BIO1, MPA1) and existing or planned initiatives (e.g. MSFD), effects should be suitably mitigated at the plan or project level.

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**Table 3-12: Summary of SA Recommendations for Geology, Geomorphology and Coastal Processes - First draft East marine plans September 2012**

| Policy                       | Recommendation for mitigation/enhancement  | Outcome for draft East marine plans  |
|------------------------------|--|--|
| CC1, all AGG policies, TIDE1 | Though the EA may have responsibility for the management of coastal erosion and flood risk, marine licensable activities have the potential to affect coastal processes which could exacerbate flood and coastal erosion risk in the absence of climate change impacts, and this policy, or one dedicated to coastal processes, could highlight this. It is acknowledged in the MPS <sup>24</sup> that climate change may exacerbate erosion and flooding issues, and that the planning authority should consider areas where development should be avoided (e.g. areas identified as Coastal Change Management Areas, or areas of coast which would be particularly sensitive to development). A policy map reflecting areas identified as being particularly sensitive, connected with other relevant plans such as SMP coastal cell policies, may assist decision makers in considering erosion and flood risk. | In the CC section, text on existing coastal change management has been added and this refers to relevant initiatives such as SMPs and their management measures. |

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<sup>24</sup> HM Government (2011) UK Marine Policy Statement

| Policy | Recommendation for mitigation/enhancement   | Outcome for draft East marine plans  |
|--------|---|--|
| TIDE1  | The policy is focussed on tidal deployment. Reference to the potential for nearshore activities to alter or exacerbate existing coastal change and flood risk issues could be made in the policy context, or else through reference to a separate policy on this issue (see above). | In the CC section, text on existing coastal change management has been added and this refers to relevant initiatives such as SMPs and their management measures. Furthermore, this policy is written so that resource is protected rather than supporting development of tidal stream energy projects. This means that any tidal stream development would have to undergo the standard project level assessments including assessment of effects of development on coastal flooding. |
| OG2    | Reference to the potential for nearshore activities to alter or exacerbate existing coastal change and flood risk issues could be made in the policy context, or else through reference to a separate policy on this issue (see above).   | In the CC section, text on existing coastal change management has been added and this refers to relevant initiatives such as SMPs and their management measures.   |

## Landscape and Seascape

**Table 3-13: Summary of SA Findings for Landscape and Seascapes - First draft East marine plans September 2012**

| Relevant Marine Plan Policies from First draft East marine plans                      | Policies which augment or provide new policy definition |  | Policies which reaffirm existing policy/planning mechanisms |  |
|---|---|--|---|--|
|   |   | SOC1, 4<br>GOV1-6<br>EV1-6<br>CCS2<br>WIND2, 3 | TIDE1<br>AGG4<br>AQ1<br>TR1, 2                              | EC3<br>SOC3<br>GOV1, 4   |
| Likely changes in baseline conditions as a result of draft East marine plans adoption | <b>Within plans review period (to 2019)</b>             | <b>Within currency of plans (to 2033)</b>      | <b>Beyond currency of plans (&gt;2033)</b>                  | The draft East marine plans reinforce existing policy and, for instance, reaffirm the UK Government's commitment to the development of renewable energy, and policies relating to seascape and the setting of heritage assets. It is not regarded that the draft East marine plans augment existing policy or development control mechanisms to such a degree that they will generate a significantly different outcome for seascape during the life of the plans. |
| <i>Significance of change</i>   | <b>0</b>  | <b>0</b>                                       | <b>0</b>  |  |
| <i>Reversibility of change</i>  | <b>NA</b>   | <b>NA</b>                                      | <b>NA</b>   |  |
| <i>Certainty</i>  | <b>H</b>  | <b>M</b>                                       | <b>L</b>  |  |

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## Discussion

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Many of the activities projected to be responsible for changes in seascape during the life of the plans (e.g. new pipeline and cable landfalls, additional offshore wind and enhanced port capacity) are unlikely to be significantly altered (e.g. in form and location) by the policies in the draft plans document, though policy provisions have the potential to lead to minor increase in offshore wind and aggregates extraction. In response to this, and in the context of wider seascape considerations, the draft plans do promote enhanced consideration of seascape in decision making. The seascape specific policy contained in the September draft of the East marine plans makes reference to the definition of landscape from the European Landscape Convention (ELC). such a description, and a consideration of seascape character outside of highly designated sites, is in conformity with the MPS, and in keeping with the tenets of the ELC (i.e. that all landscapes matter). For terrestrial developments and those within the remit of the Planning Act 2008, related policy documents (e.g. NPPF, EN-1-6, and consistent with earlier policy such as PPS7) present the view that that the highest protection status should be afforded to statutory landscape designations (such as AONBs and National Parks), within which proposed developments may be exceptionally granted consent where demonstrated to be in the public interest. As all public authorities, “...*must take any authorisation or enforcement decision in accordance with the appropriate marine policy documents, unless relevant considerations indicate otherwise*”<sup>25</sup>, there is the potential for the draft East marine plans to provide additional protection and consideration of landscape/seascape issues at the development level by augmenting the above national level policy documents.

A number of policies have the potential to positively influence the consideration of seascape in decision making (directly or indirectly) by formalising certain non-statutory arrangements. For instance reinforcing the considerations made in Natural England’s approved Coastal Access Scheme (SOC1) with regards to new coastal development and access should help to maintain the access duty, which will assist in maintaining the amenity value of the coast and so supports other policies in the plans such as those relating to Tourism and Recreation (e.g. TR2).

As part of the plan process, the MMO have developed a marine character assessment of the East marine plan areas, based on work by Natural England (yet to be published [this was at the time of assessment – published now]), and is integral to the seascape policy (SOC4). This policy may help towards the identification of seascapes and including them in the statutory decision making process by placing a requirement on decision making authorities to compare impacts of proposals (presumably the output of a developer’s seascape assessment) against the character areas identified in the MMO’s character assessment. As the character assessment undertaken for the MMO is not technology specific, nor does it reflect any plan level futures, it is not regarded that the study can be used to help inform potential cumulative effects of plan adoption at this stage. It is not regarded that the level of detail presently provided by the characterisation is sufficient to provide for an improved protection of seascapes, i.e. that it can help the relevant authority to, “...*take into account existing [landscape/seascape] character and quality, how highly it is valued and its capacity to accommodate change specific to any development*” (Defra 2011<sup>26</sup>).

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**Table 3-14: Summary of SA Recommendations for Landscape and Seascape - First draft East marine plans September 2012**

| <b>Policy</b> | <b>Recommendation for mitigation/enhancement</b>   | <b>Outcome for draft East marine plans</b>  |
|---------------|--|---|
| SOC4          | Connected with the recommendation below. It is not considered that the characterisation related to this policy in its present form provides sufficient detail as a basis for assessment and monitoring. It is suggested that this policy should make reference to other established methods until the publication and adoption of the underlying methods and | Following advice from Defra , the visual element has been separated in the plan from the wider marine characterisation exercise. MMO were considering commissioning some work to advise on other approaches for characterisation at |

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<sup>25</sup> HM Government (2009) Marine and Coastal Access Act 2009

<sup>26</sup> HM Government (2011) UK Marine Policy Statement

| Policy | Recommendation for mitigation/enhancement  | Outcome for draft East marine plans   |
|--------|--|---|
|        | characterisation commissioned by Natural England.  | the time. The key issue for characterisation is that an approach has been agreed that can be used consistently across all plan areas.   |
| EV1    | Though not considered a necessary change to policy wording, the enhancement of the approach would be useful both in assisting developer assessment and consenting decisions. In the absence of this, signposting to other relevant initiatives, assessment methods and guidance (see Appendix G) to consider at the development level could be made. | Seascape character study for the East areas has now been published by Natural England <sup>27</sup> . However, please note the previous outcome where an approach has now been agreed between Natural England, MMO and Defra. |

## Water Environment

**Table 3-15: Summary of SA Findings for Water Environment - First draft East marine plans September 2012**

| Relevant Marine Plan<br>Policies from First<br>draft East marine<br>plans                            | Policies which augment or provide new<br>policy definition |   | Policies which reaffirm existing<br>policy/planning mechanisms |   |
|--|--|---|--|---|
|  |  | MPA1<br>GOV1-4<br>EV1-6<br>CCS3<br>WIND3<br>ECO1  | TIDE1<br>CAB1<br>AGG1, 3<br>AQ1                                | EC3<br>ECO1-3<br>BIO1<br>GOV1,4<br>CCS3   |
| Likely changes<br>in baseline<br>conditions as a<br>result of draft<br>East marine<br>plans adoption | <b>Within plans<br/>review period<br/>(to 2019)</b>        | <b>Within<br/>currency of<br/>plans (to 2033)</b> | <b>Beyond<br/>currency of<br/>plans (&gt;2033)</b>             | Whilst offshore wind development and aggregates extraction may increase slightly as a result of draft East marine plans adoption (although this is uncertain) new policy would help to mitigate this. The principal aspects of the water environment which the draft East marine plans can influence are water quality/marine pollution and coastal flood risk/erosion. The draft East marine plans largely reinforce existing policy with regard to activities and reaffirm the UK Government's commitment to environmental and water quality protection. Little is mentioned about adapting to or mitigating flood risk/coastal erosion. On balance, given that existing controls are in place to encourage marine water quality improvements, the overall impact of the draft East marine plans on the water environment |
| <i>Significance of<br/>change</i>  | <b>0</b>   | <b>0</b>  | <b>0</b>   |   |
| <i>Reversibility of<br/>change</i>   | <b>NA</b>  | <b>NA</b>   | <b>NA</b>  |   |
| <i>Certainty</i>   | <b>H</b>   | <b>M</b>  | <b>M</b>   |   |

<sup>27</sup> See: <http://publications.naturalengland.org.uk/publication/2736726>

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is considered neutral.

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## Discussion

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Within the East plan areas the key drivers for change in the water environment are large scale climatic and ocean processes. At present there are no local human activities within the marine plan areas that are likely to significantly change the physical properties of the water environment although it is recognised that acidity levels and carbon dioxide uptake is increasing as a result of global human activity. The main area of influence of the draft East marine plans is, therefore, in terms of marine pollution/water quality and coastal flood risk. The draft East marine plans contain policies which both provide protection to the water environment and also promote activities which may result in harm to water quality. Some of the policies re-affirm existing policy and practice such as, for example, those relating to the on-going role of the oil and gas industry, offshore wind and aggregates extraction. Some augment existing policy such as those which seek to avoid sterilisation of tidal power potential and fishing grounds, protection of aquaculture resources and CAB1 which encourages the burying of cables within the seabed. It is also not certain whether the plans would, in fact, result in an increase in offshore wind development.

All of these activities have potential to cause marine pollution through construction or operation and the draft East marine plans may result in some additional offshore wind and aggregates extraction activity. However, significant controls and monitoring are already in place to protect water quality which would continue, for example, the requirement for EIAs and the provisions of the MSFD and WFD. Furthermore, the draft East marine plans contain a number of policies which either directly or indirectly offer protection to water quality. Principally ECO2 requires applicants to address any impacts on water quality from new proposals. ECO3 requires applicants to address the risks of pollution as a result of collision. Again, these policies are identified as re-affirming existing policy. BIO1, MPA1 and ECO1 seek for development to avoid harm to biodiversity interests and sites including cumulative effects on ecosystems which is likely to indirectly afford some protection to water quality in those areas. CCS3 presumes in favour of CCS where oil/gas infrastructure is re-used which would help to reduce the possible adverse effects on water quality. WIND3 requires wind applications outside Rounds 1-3 to be fully justified and consideration be given to SEAs as appropriate which would include consideration of water quality. GOV1-5 and GOV7 seek to ensure draft plans are in accordance with other relevant statutory and non-statutory plans and policies including SMPs and other countries' plans which would include numerous water protection and anti-pollution components. EV1-6 all relate to the need to improve the gathering, sharing and monitoring of evidence which would relate to the significant amount of research and monitoring of marine water quality, for example through OSPAR.

On balance, despite the possibility of the plans encouraging additional development activity, the numerous policy provisions for the protection of the water environment that exist, together with the policy within the plans it is not considered that the draft East marine plans would have a significant effect on water quality. Other mechanisms such as the MSFD and WFD would have a greater impact overall. As such, the overall assessment of the draft East marine plans on the water environment is neutral. However, it is considered that more could be included on coastal flood risk and the way that proposed activities consider this.

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**Table 3-16: Summary of SA Recommendations for Water Environment - First draft East marine plans September 2012**

| <b>Policy</b> | <b>Mitigation/Enhancement Recommendations</b>   | <b>Outcome for draft East marine plans</b>   |
|---------------|---|--|
| SOC2          | Consideration should be given to the environmental impacts of associated land-based allocations and decision-makers should seek to avoid significant impacts on the (water) environment where possible.                   | Text included under TR4 "All new licences are likely to be subject to project-level assessment including EIA and Coastal Impact Study to ensure any tourism or recreation opportunities does not have a negative impact on existing features". |
| Ports policy  | Port development has potential to have significant impacts on the water environment. The policies currently focus on navigation issues. It is proposed that a cross-reference to the provisions of ECO1 and 2 be included | Text added to context referring to environmental issues at ports and referring to SOC2 (previously SOC3).  |

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within this section, otherwise a links to an amended GOV2 as proposed above.

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|         |  |   |
|---------|--|---|
| General | The draft East marine plans have little provision with regard to coastal flood risk and erosion. Marine activities can in certain circumstances exacerbate flood risk and erosion or coastal development may be at risk itself. In order to reflect the MPS, it is proposed that a further policy be included which reflects these needs, perhaps as an additional climate change policy. The principles of integrated coastal zone management and collaboration between marine and terrestrial planners should be reiterated. | Some information and sign-posting under the climate change policies has been included. A policy would focus on sign-posting applicants and DMAs to SMPs etc... Policies are aimed adding context/value to existing information which this type of policy would not do. Therefore the information has been included but as sign-posting. |
| General | Marine litter and debris is a concern in the East of England plan area. It is proposed that measures to avoid activities which could exacerbate this issue are put in place, potentially within the Tourism and Recreation policies section.   | Marine litter is covered under objective 7 and signposts MSFD. The importance of clean healthy beaches is also mentioned under the T&R policies.  |

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## 3.5 Appraisal of Second draft East Marine Plans November 2012

A further draft of the East marine plans was produced which considered the SA recommendations made in September and also internal feedback on the documents themselves from a range of stakeholders. This draft was subject to a further round of interim SA in November 2012. The findings and recommendations at this stage are summarised below.

The changes made to the East marine plans following the September review were largely small in nature so the SA in November 2012 focused more on the implications of changes, rather than the 'absolute effects' of the plans as they stood at that time. It should be noted that any references to policy names or numbers relates to the plan as they stood at the time and are not necessarily the same as those used in the consultation draft.

### 3.5.1 Summary of appraisal findings

#### Air and Climate

**Table 3-17: Summary of SA Findings for Air and Climate - Second draft East marine plans November 2012**

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Most of the changes made to policies will have a relatively subtle effect. In particular:

- Policy EC3, which reflects the central importance of supporting development of the wind energy industry, now refers to '*Regulatory authorities should...*' rather than '*Licensing authorities will...*' This change is supported on the basis that it should increase the potential for this policy to be drawn on by terrestrial planning authorities as part of the policy context to inform Local Plan-making.
- Policy WIND1, which seeks to ensure that offshore wind farm (OWF) development within existing leased areas is not compromised now specifies that there is a need to take into account the needs of the OWF during the '*construction, operation and decommissioning*' stages.
- Policy WIND3, which sets out the conditions under which OWF development outside of leased areas will be appropriate, is now less restrictive which has positive implications in terms of OWF development.
- Policy OG2 has been clarified to emphasise the importance of oil and gas exploration not being compromised by other development. Specifically, it now states that: '*Regulatory authorities should prefer new oil and gas exploration*



*and licensable oil and gas activities over other developments where required...*' The previous policy wording made reference to there being a 'presumption in favour of new oil and gas exploration'.

The most notable change relates to Policy CC2. The revision to this policy has introduced the possibility that it is acceptable for applications to demonstrate how emissions will be 'mitigated' at the expense of demonstrating that emissions will be minimised. It appears that 'mitigation' will, in practice, mean demonstrating that mechanisms can be put in place to 'offset'. This is not considered appropriate, as efforts should always be made to minimise emissions associated with a particular development.

**Table 3-18: Summary of SA Recommendations for Air and climate - Second draft East marine plans September 2012**

| <b>Policy</b> | <b>Mitigation/Enhancement Recommendations</b>   | <b>Outcome for draft East marine plans</b>   |
|---------------|---|--|
| CC2           | The phrase ' <i>Where emissions cannot be minimised, suitable mitigation measures will be encouraged</i> ' should be revisited. It will always be the case that emissions can be minimised.   | The Policy has been revised to reflect this recommendation and now encourages mitigation measures irrespective of emissions. It also now says consideration should be given to how proposals may affect emissions from other users and any related mitigation measures already in place. |
| CCS2          | This policy states that: <i>Where possible, regulatory authorities should support CCS developments that involve the re-use of oil or gas infrastructure, rather than installing new infrastructure.</i><br><br>It is suggested that the term 'Where possible' is removed. | The Policy has been revised to remove this term.   |

## Communities and Health

**Table 3-19: Summary of SA Findings for Communities and Health - Second draft East marine plans November 2012**

Most of the beneficial effects of the Plans highlighted as part of the September 2012 appraisal remain current. However, two changes have been made that give some cause for concern:

- Objective 4 - *Improve social well-being by supporting activities that benefit health, provide equitable access to marine recreational opportunities and lead to vibrant sustainable communities – has been changed to: Reduce deprivation and support vibrant, sustainable communities, through improving health and social well-being.* In-line with this, Policy SOC1 now supplements the reference to 'access to the coast and marine area' with a reference to the importance of providing health and social well-being benefits. The effects of this change are somewhat uncertain. Focusing on the policy wording, it could perhaps be criticised as distracting from the understanding of 'health and social-wellbeing' determinants as being extremely wide-ranging, and the fact that the 'key issues' are first and foremost associated with socio-economic drivers (rather than coastal/marine access).
- The policy reference to '*encouraging applications that support tourism diversification including expanding the season through new forms of tourism*' has been removed. A new policy reference to supporting '*proposals that deliver tourism and/or recreation related benefits in [adjacent] communities*' has been added to the 'Tourism and Recreation' Chapter. This is notable given that tourism diversification has the potential to make a significant contribution to addressing community and well-being problems in communities along the coastline.

One other change is worth noting: Policy EC2 – a policy of central importance as it seeks to reflect the importance of sustainable economic growth focused on addressing local issues – is now worded in a more proactive way. In particular, it now sets out the types of 'development' that 'regulatory authorities should prefer'; whereas previously the policy



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referred to the types of 'licensable marine activities' that authorities should 'consider favourably'. This change is supported on the basis that it should increase the potential for this policy to be drawn on by terrestrial planning authorities as part of the policy context to inform Local Plan-making.

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**Table 3-20: Summary of SA Recommendations for Communities and Health - Second draft East marine plans November 2012**

| <b>Policy</b> | <b>Mitigation/Enhancement Recommendations</b>   | <b>Outcome for draft East marine plans</b>                    |
|---------------|---|---|
| SOC1          | Consider revisiting the changes made to Objective 4 and SOC1 to reflect the fact that health and wellbeing is associated with wide-ranging factors, of which coastal/marine access is one. The policy could be reworded to: <i>Decision-making authorities should support development and other activities or management measures that provide health and social well-being benefits <u>including through</u> maintaining, or enhancing, access to the coast and marine area.</i> Reference to the multi-faceted nature of health and well-being determinants should also be made within the supporting text. | Policy wording has been revised to reflect the recommendation |

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## Cultural Heritage

**Table 3-21: Summary of SA Findings for Cultural Heritage - Second draft East marine plans November 2012**

### Discussion

With regard to the likely significant effects on cultural heritage, the policies within the November 2012 draft of the East marine plans are not greatly different to those within the September 2012 draft. Many of the policy areas of relevance remain similar in intention to those of the earlier version, albeit with minor changes in wording or emphasis.

Consideration has also been given to the SA recommendations made in September. As with the September 2012 draft, the draft East marine plans contain policies which both provide protection to heritage assets and also promote activities which may result in harm to heritage assets. Some re-affirm existing policy such as, for example, those relating to the on-going role of the oil and gas industry, offshore wind and aggregates extraction. Some augment existing policy such as those which seek to avoid sterilisation of tidal power potential and fishing grounds.

Whilst activities which have potential to harm heritage assets are still promoted, given the policy framework provided it is unlikely that this would be with any less care for the historic environment than in the absence of the draft East marine plans. Controls such as EIAs, legal protection and good practice guidance on heritage remain in place.

The principal policy which seeks to directly protect heritage assets is now SOC2 (formerly SOC3). This now includes a sequential format for considering heritage assets when consenting new development. This is clear and logical and focuses on avoidance of harm as a priority, reflecting the previous draft's presumption against harm. It no longer references culture or character although this, together with the definition of heritage assets is given in the supporting text. This remains beneficial to heritage. Consideration of character is now given in a new SOC3.

Other policies which offer indirect protection to heritage assets are largely as in the September 2012 draft although some have been merged or changed name. Some others have been made less relevant to heritage than before and have, therefore, been removed from this assessment. The indirect benefits of BIO1, GOV1 and GOV2 remain although GOV3 (non-statutory plans) and GOV4 (impact on bordering states) have been moved to supporting text under GOV1. GOV5 (co-location) is now GOV3. Similarly, the text on gathering, sharing and monitoring of evidence formerly in EV1-6 is now listed in Chapter 4, but still remains relevant to the protection and understanding of the marine historic environment. Reference to cultural heritage protection is now also signposted in the ports policy.

Policies TR1 and TR2 are no longer as explicit about heritage as in the earlier draft as explicit reference to heritage coast has been removed and there is less reference to the visual impacts of marine activities on coastal tourism and recreation (including heritage enjoyment). TR4, however, now makes reference to the role of EIAs for tourism and recreation activities which may have significant effects (including on heritage).

On balance, as with the September 2012 draft, it is considered that whilst the draft East marine plans are unlikely to have a significant adverse effect on heritage assets due to its inclusion of a number of policy measures to protect heritage, some of which go slightly beyond existing policy mechanisms or at least help to re-assert them in this context. As such, this draft of the draft East marine plans is considered to have a neutral effect on the heritage baseline compared with the situation without the draft East marine plans.

**Table 3-22: Summary of SA Recommendations for Cultural Heritage - Second draft East marine plans November 2012**

| Policy | Mitigation/Enhancement Recommendations   | Outcome for draft East marine plans  |
|--------|--|--|
| SOC2   | SOC2 no longer uses the term, 'substantial harm'. This terminology is explicitly used by the NPPF and should be referenced in the supporting text for clarity.                             | The supporting text uses equivalent references from the MPS instead, as the more relevant document for marine planning   |
| GOV1   | Although some policy has been amended, it is important that due consideration is given to the environmental as well as quality and capacity impacts of associated on-shore infrastructure. | Supporting text now explicitly advises regulatory authorities to consider positive and negative effect of the provision of infrastructure onshore and offshore |

## Marine Ecology

**Table 3-23: Summary of SA Findings for Marine Ecology – Second draft East marine plans November 2012**

### Discussion

Many of the considerations assigned to decision makers by policies in the draft plans reflect existing policy level protection of environmental quality, biodiversity and sites and species of conservation interest. Policies in the draft plans have the potential to enhance present protection measures through ensuring that cumulative effects and good design are taken account of or encouraged respectively. Cumulative effects are generally considered in project level EIA (e.g. in relation to hydrocarbon activities or offshore wind farms), and the MMO promote the use of the latest available guidance, on which the decision maker (assumed to be the relevant authority) can provide advice. When considered in combination with objective 11 intended to enhance the evidence base (cumulative effects are highlighted as a priority area in the MMO Strategic Evidence Plan), the plans may increase the understanding of potential effects and methods used by applicants and decision makers in consenting. The plans are in keeping with the MPS with regards to encouraging activities which have the potential to “enhance” benefits to marine ecology, i.e. incorporating elements of design which seek to have a positive effect on the marine environment rather than ones which have a neutral or minor negative effect.

The plans contain policy which places a requirement on decision makers to consider how activities between or outside of Marine Protected Areas (MPAs) might compromise the delivery of an “ecologically coherent network of MPAs”. In combination with policy which largely reiterates the MPS and existing provisions for the statutory protection of certain sites, habitats and species, the plans may assist in protecting mobile species which range outside site boundaries, and also the habitats beyond site boundaries that they may rely on (e.g. as foraging areas).

The possible effects of activity displacement (particularly fishing, for instance from policies which seek to enhance wind and aggregates) during the life of the plans are important. Relevant policy could more explicitly tackle the possible environmental effects from displacement to different receiving environments rather than just the socio-economic issue of movement from existing grounds. The implementation of policies including those which seek to improve the consideration of cumulative effects and promote the development which enhance benefits to marine ecology, in combination with existing environmental protection measures and other targets which are forthcoming (e.g. through the MSFD), can contribute to the provision of a high level of protection for marine ecology, and has the potential to result in a minor positive change in baseline conditions. Though such changes may not be evident in the immediate term or within the first review period (by 2019), in the medium-term the contribution of marine planning may be more apparent and will be reflected in the draft East marine plans’ monitoring plan, and in those indicators suggested in this SA.

**Table 3-24: Summary of SA Recommendations for Marine Ecology – Second draft East marine plans November 2012**

| <b>Policy</b> | <b>Recommendation for mitigation/enhancement</b>  | <b>Outcome for draft East marine plans</b>  |
|---------------|---|---|
| AQ1           | The policy is framed in relation to aquaculture sites; an alternative approach which could be explicitly covered in the policy is the augmentation of natural stocks through the rearing and release of juveniles e.g. lobsters.  | Recommendation not adopted in policy, but the supporting text now makes clear that this also covers augmentation of natural stocks.   |
| FISH1, FISH2  | FISH1 requires authorities to assess which options apply; the wording of this should be strengthened to reflect a preference for developments which avoid or minimise exclusion or displacement of fishing activities. While FISH2 may have associated benefits for seabed habitats, FISH1 could more explicitly tackle the possible environmental issue of | Recommendation reflected in FISH1, so that criterion a) reflects the recommendation for avoiding or minimising displacement.<br>FISH1 also now references impacts as a whole, rather than just the socio-economic |

displacement to different receiving environments rather than impacts. just the socio-economic issue of movement from existing grounds.

|      |   |   |
|------|---|---|
| BIO1 | The policy is apparently restricted to habitats and species that are protected or of conservation concern. With reference to the terrestrial example of the declines in common farmland birds, it is recommended that the policy is widened to cover all marine biodiversity, not just that which is on the present day conservation radar. | Policy revised to incorporate wider biodiversity interests. |
|------|---|---|

## The Economy

**Table 3-25: Summary of SA Findings for the Economy - Second draft East marine plans November 2012**

Most of the changes made to policies will have a relatively subtle effect. In particular:

- Within the sector specific policies of the November 2012 Plans it is apparent that subtly different policy approaches are put in place to provide protection to particular activities. For example, in some cases policy wording highlights that, where it is not possible to minimise or mitigate the impact of a proposed activity on another/others, then the proposed activity should only be allowed subsequent to a consideration of relative merits.
- Policy GOV5 has been simplified and now refers to 'co-existence' in addition to 'co-location'. Also, whilst the previous (Sept 2012) policy approach stated that there should be an emphasis on co-location in relation to major development (those subject to EIA), the November 2012 policy approach does not state this, and so the assumption is that co-location (and co-existence) should be pursued regardless of the scale of the projects involved.
- Two policies relating to Dredging have been combined into one, and so it can be said that there is slightly less weight attributed to this activity through policy.
- In relation to Aquaculture, the policy approach (which involves ensuring that other activities do result in opportunities for aquaculture being foreclosed) should now be applied '*where research identifies optimum sites...*' as opposed to '*within designated shellfish waters, shellfish harvesting waters and sites subject to [existing regulatory orders]*'.

**Table 3-26: Summary of SA Recommendations for Economy - Second draft East marine plans November 2012**

| Policy | Mitigation/Enhancement Recommendations  | Outcome for draft East marine plans  |
|--------|---|--|
| PS3    | It is suggested that the stringency of the policy wording is increased to reflect the importance of avoiding impacts to port activity. This could be achieved simply by inserting a reference to the need to take into account 'the relative merits' of port activity (given that this reference is made in relation to the protection of tourism and recreation activities); or, it might be appropriate to refer to the need to 'bear in mind the importance of ports to local and national economies'. | Policy wording not revised. Background text explains the economic importance of ensuring thriving ports, including by signposting to other policies / initiatives. |

## Geology, Geomorphology and Coastal Processes

**Table 3-27: Summary of SA Findings for Geology, Geomorphology and Coastal Processes - Second draft East marine plans November 2012**

### Discussion

The draft East marine plans set out a range of policies of relevance to this SA topic, whether they be in relation to the avoidance of damage to MPAs selected wholly or in part for geological or geomorphological features, or whether they seek to influence activities which may generate direct physical effects on seabed features (e.g. aggregates extraction, renewables installation, cable and pipeline installation). With regards to the former, policies related to the protection of designated sites and, “habitats and other species of principal importance for the conservation of biodiversity; and to geological interests within the wider environment”, are covered by existing requirements. Equally, reference is made to the WFD and MSFD and related descriptors, which include targets for achieving Good Ecological/Environmental Status (GES) or Potential (GEP) for morphological criteria. While the plans will take account of evidence collated from MSFD monitoring programmes, it is expected that this will inform future marine planning – there is no specific policy which relates to how the plans will assist in delivering MSFD and WFD targets (other than in potentially assisting in developing the evidence base through, amongst other things, its Strategic Evidence Plan), and it is expected that this may be a consideration of later iterations of the plans.

Many of the policies reaffirm or complement existing national policy (e.g. as contained in the MPS, NPSs, NPPF) and non-statutory plans (e.g. SMPs). Policies which augment existing provisions include those for offshore wind, CCS, aggregates extraction, and tidal energy, which effectively safeguard areas of potential resource against activities which could preclude future activity in these sectors. In combination, should these policies assist in the deployment of CCS and renewables technologies and the maintenance of a supply of aggregates which include material that may be used in beach recharge, they could assist in climate change adaptation (in combination with wider initiatives) and the transition to a lower carbon energy mix for the east marine plan areas.

**Table 3-28: Summary of SA Recommendations for Geology, Geomorphology and Coastal Processes - Second draft East marine plans November 2012**

| Policy | Recommendation for mitigation/enhancement  | Outcome for draft East marine plans   |
|--------|--|---|
| CCS1   | CSS1 requires authorities to assess which options apply; the wording of this should be strengthened to reflect a preference for developments which avoid prevention or impedance of carbon dioxide transport and storage.  | Policy wording has been revised. Proposals must now demonstrate how they will avoid or mitigate interaction with areas identified as being prospective for CCS. |
| CCS2   | The policy encourages regulatory authorities to prefer CCS projects where pipelines are co-located. Using the routes of existing gas pipelines and proposed wind farm cable routes as examples, it is questioned whether this policy is likely to deliver, and should it remain. There are a range of major CO2 emitters onshore and a diversity of potential offshore storage sites, and a variety of factors will dictate proposed pipeline routes (constructability, number of existing pipelines and cable requiring to be crossed, aggregate extraction areas, sensitive seabed habitats, conservation sites etc.). Identical routeing considerations apply to cables and oil & gas but CAB1 and OG1 & 2 do not propose such co-location. | Policy wording has been revised. Pipeline co-location no longer explicitly mentioned in policy wording.   |

## Landscape and Seascape

**Table 3-29: Summary of SA Findings for Landscape and Seascape - Second draft East marine plans November 2012**

### Discussion

Many of the activities projected to be responsible for changes in seascape during the life of the plans (e.g. new pipeline and cable landfalls, additional offshore wind and enhanced port capacity) are unlikely to be significantly altered (e.g. in form and location) by the policies in the draft plans document, though policy provisions have the potential to lead to minor increase in offshore wind and aggregates extraction. In response to this, and in the context of wider seascape considerations, the draft plans do promote enhanced consideration of seascape in decision making. The seascape specific policy contained in the September draft East marine plans makes reference to the definition of landscape from the European Landscape Convention (ELC). Such a description, and a consideration of seascape character outside of highly designated sites, is considered to be in conformity with the MPS, and in keeping with the ELC (i.e. that all landscapes matter). For terrestrial developments and those within the remit of the Planning Act 2008, related policy documents (e.g. NPPF, EN-1-6, and consistent with earlier policy such as PPS7) present the view that the highest protection status should be afforded to statutory landscape designations (such as AONBs and National Parks), within which proposed developments may be exceptionally granted consent where demonstrated to be in the public interest. As stated in the MCAA (2009)<sup>28</sup> all public authorities, "...must take any authorisation or enforcement decision in accordance with the appropriate marine policy documents, unless relevant considerations indicate otherwise" there is the potential for the draft East marine plans to provide additional protection and consideration of landscape/seascape issues at the development level by augmenting the above national level policy documents.

A number of policies have the potential to positively influence the consideration of seascape in decision making (directly e.g. SOC3 or indirectly) by formalising certain non-statutory arrangements and will assist in maintaining the amenity value of the coast and so supports other policies in the plans such as those relating to Tourism and Recreation (e.g. TR2).

**Table 3-30: Summary of SA Recommendations for Landscape and Seascape - Second draft East marine plans November 2012**

| Policy | Recommendation for mitigation/enhancement   | Outcome for marine plans |
|--------|---|--------------------------|
| N/A    | No additional recommendations on this topic for the November iteration of the draft plans |                          |

## Water Environment

**Table 3-31: Summary of SA Findings for Water Environment - Second draft East marine plans November 2012**

### Discussion

With regard to the likely significant effects on the water environment, the policies within the November 2012 draft of the East marine plans are not greatly different to those within the September 2012 draft. Many of the policy areas of relevance remain similar in intention to those of the earlier version, albeit with minor changes in wording or emphasis. Consideration has also been given to the SA recommendations made in September. As with the September 2012 draft, the main area of influence of the draft East marine plans is, therefore, in terms of marine pollution/water quality and coastal flood risk. The plans contain policies which both provide protection to water quality and also promote activities

<sup>28</sup> HM Government (2009) Marine and Coastal Access Act

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## Discussion

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which may result in harm to it. Some re-affirm existing policy and some augment it.

As previously, the significant existing controls which seek to protect water quality will still apply, for example, the requirement for EIAs and the provisions of the MSFD and WFD. The November 2012 draft continues to include a number of policies which either directly or indirectly offer protection to water quality. However, policy ECO2 from the September draft requiring applicants to address any impacts on water quality from new proposals has now been removed and is only signposted in supporting text. ECO3 has been renamed ECO2 and is less specific regarding regulatory authorities needing now to only 'consider' the risks of pollution as a result of collision. As both of these policies merely re-affirm existing policy, their loss is not significant to the assessment.

BIO1, MPA1 and ECO1 are more simplified but continue to seek for development to avoid harm to biodiversity interests and sites which may indirectly benefit water quality. The supporting provisions of CCS3, WIND 3, GOV1 and GOV2 identified in the September assessment also remain although minor changes have been made to some. GOV3 (non-statutory plans) and GOV4 (impact on bordering states) have been moved to supporting text under GOV1. GOV5 (co-location) is now GOV3 and GOV7 (displacement) is now GOV4 and has been simplified. Similarly, the text on gathering, sharing and monitoring of evidence formerly in EV1-6 is now listed in Chapter 4, but still remains relevant.

The November draft also now includes signposting regarding how coastal change is addressed and also a reference to marine litter is now provided under Objective 6. Reference to the protection of the water environment is now also signposted in the ports policy.

On balance, as with the September 2012 draft, despite (now less specific) policy provisions for the protection of the water environment it is not considered that the draft East marine plans would go beyond existing policy mechanisms and other mechanisms such as the MSFD and WFD which would have a greater impact. As such, the overall assessment of the draft East marine plans on the water environment remains neutral.

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**Table 3-32: Summary of SA Recommendations for Water Environment - Second draft East marine plans  
November 2012**

| <b>Policy</b> | <b>Mitigation/Enhancement<br/>Recommendations</b> | <b>Outcome for draft East<br/>marine plans</b> |
|---------------|---|--|
|---------------|---|--|

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No further recommendations have been made at this stage.

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# 4 WHAT ARE THE APPRAISAL FINDINGS FOR THE EAST MARINE PLANS?

## 4.1 Introduction

The following sections report on the appraisal of the East marine plans, implementing those methods outlined in Section 2.5. In Section 4.2 the appraisal initially considers the range of policies and their context within the East marine plans (i.e. supporting information, policy maps and guidance<sup>29</sup>) as part of a policy screening exercise.

Sections 4.3-4.10 then provide a topic based appraisal of those policies identified as being relevant to each respective topic. The appraisal considers the combined effect of implementing these policies together 'as a plan', and also gives consideration to the potential for the plan to act cumulatively with other activities (ongoing or 'in the pipeline'). Further consideration of the potential for cumulative effects is presented in Section 4.11. Where it has been identified that a change in policy wording (or wording of supporting text) would improve or provide more clarity to the plans, recommendations are made for each topic.

Please note that the assessments described below represent the assessment of the marine plans in January 2014 following consultation feedback on the draft plans. This assessment replaces the assessment of the draft plans undertaken in March 2013. Under each assessment section, a description of the key changes between the January 2014 and March 2013 assessments has been provided. This enables the reader to identify the main differences between the assessments. It was decided that it was not helpful to reproduce the entire March 2013 assessment in this report as the extent of significant changes between that and the current version are relatively small.

## 4.2 Policy Screening

Each policy has been considered in turn with the aim of defining:

- whether the policy augments existing policies or planning mechanisms with new provisions or provides further policy definition;
- whether the policy merely reaffirms existing policy and planning mechanisms; and
- which policies are relevant to which receptor topics (i.e. a high level consideration of what (if any) effect the adoption of the policy will have for any of the topic based receptor groups considered in the SA – to be considered further in Sections 4.3-4.10).

A matrix reflecting the above process is shown in Annex I, and is summarised below (see Table 4-1). Readers may well wish to refer to Annex I, as this presents a more detailed consideration of each of the plan policies.

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<sup>29</sup> It is understood that, "If to any extent a policy stated in a marine plan conflicts with any other statement or information in the plan, that conflict must be resolved in favour of the policy." Marine and Coastal Access Act 2009, para. 51(10).



Table 4-1: Summary of policy screening (for more information see Annex I)

|   | Reaffirms existing policy/planning mechanisms | Augments or provides new policy clarification | Policies of key relevance to SA Topic |             |                   |         |                |   |                      |                   |
|---|---|---|---------------------------------------|-------------|-------------------|---------|----------------|---|----------------------|-------------------|
|   |   |   | Air Quality & Climate                 | Communities | Cultural Heritage | Economy | Marine Ecology | Geology, substrates & coastal processes | Landscape & Seascape | Water Environment |
| <b>Objective level policies</b>             |   |   |                                       |             |                   |         |                |   |                      |                   |
| EC1   | ✓   | x   |                                       |             |                   |         |                |   |                      |                   |
| EC2   | ✓   | x   |                                       |             |                   |         |                |   |                      |                   |
| EC3   | ✓   | x   |                                       |             |                   |         |                |   |                      |                   |
| SOC1  | x   | ✓   |                                       |             |                   |         |                |   |                      |                   |
| SOC2  | x   | ✓   |                                       |             |                   |         |                |   |                      |                   |
| SOC3  | x   | ✓   |                                       |             |                   |         |                |   |                      |                   |
| ECO1  | x   | ✓   |                                       |             |                   |         |                |   |                      |                   |
| ECO2  | ✓   | x   |                                       |             |                   |         |                |   |                      |                   |
| BIO1  | ✓   | x   |                                       |             |                   |         |                |   |                      |                   |
| BIO2  | x   | ✓   |                                       |             |                   |         |                |   |                      |                   |
| MPA1  | x   | ✓   |                                       |             |                   |         |                |   |                      |                   |
| CC1   | x   | ✓   |                                       |             |                   |         |                |   |                      |                   |
| CC2   | x   | ✓   |                                       |             |                   |         |                |   |                      |                   |
| GOV1  | x   | ✓   |                                       |             |                   |         |                |   |                      |                   |
| GOV2  | x   | ✓   |                                       |             |                   |         |                |   |                      |                   |
| GOV3  | x   | ✓   |                                       |             |                   |         |                |   |                      |                   |
| <b>Sector/topic/issue specific policies</b> |   |   |                                       |             |                   |         |                |   |                      |                   |
| DEF1  | ✓   | x   |                                       |             |                   |         |                |   |                      |                   |
| OG1   | ✓   | x   |                                       |             |                   |         |                |   |                      |                   |
| OG2   | ✓   | x   |                                       |             |                   |         |                |   |                      |                   |
| WIND1                                       | ✓   | x   |                                       |             |                   |         |                |   |                      |                   |
| WIND2                                       | x   | ✓   |                                       |             |                   |         |                |   |                      |                   |
| TIDE1                                       | x   | ✓   |                                       |             |                   |         |                |   |                      |                   |
| CCS1  | x   | ✓   |                                       |             |                   |         |                |   |                      |                   |
| CCS2  | x   | ✓   |                                       |             |                   |         |                |   |                      |                   |
| PS1   | x   | ✓   |                                       |             |                   |         |                |   |                      |                   |
| PS2   | x   | ✓   |                                       |             |                   |         |                |   |                      |                   |

|       | Reaffirms existing policy/planning mechanisms | Augments or provides new policy clarification | Policies of key relevance to SA Topic |             |                   |         |                |   |                      |
|-------|---|---|---------------------------------------|-------------|-------------------|---------|----------------|---|----------------------|
|       |   |   | Air Quality & Climate                 | Communities | Cultural Heritage | Economy | Marine Ecology | Geology, substrates & coastal processes | Landscape & Seascape |
| PS3   | x   | ✓   |                                       |             |                   |         |                |   |                      |
| DD1   | ✓   | x   |                                       |             |                   |         |                |   |                      |
| AGG1  | ✓   | x   |                                       |             |                   |         |                |   |                      |
| AGG2  | ✓   | x   |                                       |             |                   |         |                |   |                      |
| AGG3  | x   | ✓   |                                       |             |                   |         |                |   |                      |
| CAB1  | x   | ✓   |                                       |             |                   |         |                |   |                      |
| FISH1 | x   | ✓   |                                       |             |                   |         |                |   |                      |
| FISH2 | x   | ✓   |                                       |             |                   |         |                |   |                      |
| AQ1   | x   | ✓   |                                       |             |                   |         |                |   |                      |
| TR1   | x   | ✓   |                                       |             |                   |         |                |   |                      |
| TR2   | x   | ✓   |                                       |             |                   |         |                |   |                      |
| TR3   | x   | ✓   |                                       |             |                   |         |                |   |                      |

Table 4-2: Policy abbreviations

| Objective level policies             |                            |      |                           |
|--------------------------------------|----------------------------|------|---------------------------|
| EC                                   | Economic                   | SOC  | Social                    |
| CC                                   | Climate Change             | GOV  | Governance                |
| ECO                                  | Ecological                 | EV   | Evidence                  |
| BIO                                  | Biological                 | MPA  | Marine Protected Areas    |
| Sector/topic/issue specific policies |                            |      |                           |
| AQ                                   | Aquaculture                | FISH | Commercial Fishing        |
| CAB                                  | Subsea Cabling             | OG   | Oil and Gas               |
| AGG                                  | Aggregate                  | PS   | Ports and Shipping        |
| CCS                                  | Carbon Capture and Storage | TIDE | Tidal and Wave Renewables |
| DD                                   | Dredging and Disposal      | TR   | Tourism and Recreation    |
| DEF                                  | Defence                    | WIND | Offshore Wind Renewables  |

## 4.3 Air and Climate

### 4.3.1 Appraisal table

Table 4-3: Appraisal Summary Table for Air and Climate –East marine plans January 2014

|                      |                           |
|----------------------|---------------------------|
| Relevant Marine Plan | Objectives: 1, 2, 3, 4, 9 |
|----------------------|---------------------------|

| Objectives   |  |  |   |         |
|--|--|--|---|---------|
| Relevant Marine Plan Policy Areas                                | Section 3.1: Economic  |  | Section 3.9: Energy Production – Tidal Stream and Wave      |         |
|  | Section 3.2: Social and Cultural   |  |   |         |
|  | Section 3.3: Environment   |  | Section 3.10: Carbon Capture and Storage                    |         |
|  | Section 3.4 Climate Change   |  | Section 3.11: Ports and Shipping                            |         |
|  | Section 3.5 Governance   |  |   |         |
|  | Section 3.7: Oil and Gas   |  |   |         |
|  | Section 3.8: Offshore Renewable Wind Energy  |  |   |         |
| Relevant Marine Plan Policies                                    | Policies which augment or provide new policy definition  |  | Policies which reaffirm existing policy/planning mechanisms |         |
|  | SOC1   | CCS1-2   | EC3   | SOC1    |
|  | ECO1   | PS1-3  | ECO1  | ECO1    |
|  | CC2  |  | GOV 1   | CC2     |
|  | GOV 1-3  |  | OG1-2   | GOV 1-3 |
|  | WIND 2   |  | WIND 1  | WIND 2  |
|  | TIDE1  |  |   | TIDE1   |
|  |  |  |   |         |
| Potentially Sensitive Receptors                                  | <p>The climate (through contributions to greenhouse gas emissions)</p> <p>Air quality in areas where there are sensitive receptors (e.g. humans and environments sensitive to acid loading), such as ports where air quality problems have already arisen as a result of shipping traffic and associated activity.</p> |  |   |         |
| Current and future baseline conditions in absence of Marine Plan | Current  | <ul style="list-style-type: none"> <li>In terms of sources of air pollution: The greater North Sea is one of the world's busiest maritime areas with high shipping densities particularly in inshore waters. Ships traditionally use heavy fuel oils for propulsion. Heavy fuel oils can have a sulphur content of up to 5 %. In comparison, the sulphur content of fuels used in trucks or passenger cars must not exceed 0.001 %.</li> <li>Offshore oil and gas installations are a source of emissions, particularly in terms of sulphur dioxide (SO<sub>2</sub>) and nitrogen oxide (NO<sub>x</sub>).</li> <li>Air Quality Management Areas (AQMAs) are in place at 16 locations within local authority areas adjacent to the east inshore plan area and relate to exceedances of PM<sub>10</sub> and NO<sub>2</sub>. Air quality is not routinely monitored at offshore sites.</li> <li>A number of offshore wind farms are present in the inshore area. East plan areas currently account for 37% (1.7GW) of wind energy generation (operational or under construction).</li> <li>Wave and tidal technologies are emerging industries with some demonstrator sites operational but no sites are located in the East plan areas.</li> </ul> |   |         |

- East plan areas include the majority of future sites leased in plan areas (54% of English Round 2 and 76% of England Round 3). The proposed capacity of the Round 3 sites is 32GW with the potential to supply between 14 and 24 per cent of UK electricity. Total offshore installed capacity is projected to be around 18 GW by 2020.
- CCS has the potential to contribute significantly to climate change mitigation. However, the first CCS demonstration project in the UK is yet to be completed.
- NO<sub>x</sub> from offshore oil and gas installations is likely to reduce in line with declining extraction.
- Emissions of SO<sub>2</sub> are expected to reduce significantly over the plans period as a result of a new European Directive (December, 2012) that progressively reduces the maximum sulphur content of marine fuels from the current 3.5% to 0.5% by January 2020. Without this action, sulphur emissions from shipping in EU sea areas would exceed those from all land-based sources by 2020.

Likely changes in baseline conditions as a result of East marine plans adoption

**Within plans review period (to 2019)**

**Within currency of plans (to 2033)**

**Beyond currency of plans (>2033)**

On balance, the plans are unlikely to have any significant impact in the short-term; however, in the medium-term it may have a minor positive effect on the baseline in terms of climate change. The Plans have the potential to lead to greater deployment of offshore wind. In the longer term, this support and encouragement for wind energy in the East Plan areas should help to ensure that electricity generation from renewable sources increasingly replaces energy generation from fossil fuels nationally. In terms of other climate change mitigation initiatives, the plans are less likely to have a significant effect. Similarly, the plans are unlikely to lead to significant effects in terms of air quality

*Significance of change*

**0**

**+**

**+**

*Reversibility of change*

**NA**

**R**

**R**

*Certainty*

**M**

**L**

**L**

Cumulative Impacts Consideration

Climate change is, of course, a global consideration and hence there is a need to consider the effects of the plan alongside wider activities and initiatives. It is because of this that it is not possible to conclude that there will be a 'major' positive effect.

In terms of air quality, there is the potential for effects of the plan to combine with the effects of other activities and initiatives, particularly those that have an influence on activities at ports and harbours. Cumulative effects could be positive or negative.

Uncertainties

In terms of climate change mitigation, the uncertainties are described above.

In terms of impacts to air quality, the uncertainties stem primarily from the fact that the plan generally stops short of specifying the location and timing of developments. There is also the fact that, aside from knowing the location of AQMAs, there is incomplete knowledge regarding the location of 'sensitive receptors'.

### 4.3.2 Discussion

A foremost consideration relates to the influence of the plan in terms of supporting the commercial application of technologies for renewable energy generation CCS. The Plans include policies focused on offshore wind energy, tidal stream technologies and CCS.

Of these technologies, offshore wind energy is the most prominent given the maturity of the technology. Importantly, one of the three 'Economic' policies is dedicated to ensuring that

wherever appropriate, wind energy proposals are supported. This 'Economic' policy complements the two 'Wind' focused policies and the effect should be to enhance developer confidence to some extent, i.e. ensure that the plan areas are seen as suitable areas in which to invest in offshore wind. It is acknowledged that the main drivers of offshore wind energy development are national policy and associated market interventions.

The overall effect should be to bring about growth in the sector within the Plan areas over and above the baseline. It is not possible to say to what extent this will happen, only that it is a likely benefit of the plan policies. This is positive from a perspective of supporting the achievement of established national carbon reduction targets given that, in the long term, support and encouragement for wind energy in the East Plan areas should help to ensure that electricity generation from renewable sources increasingly replaces energy generation from fossil fuels.

In terms of CCS and tidal stream technologies there is less of a policy emphasis, but it should still be the case that a useful policy framework is put in place that will help to ensure that the potential to roll-out these activities is not unduly foreclosed. It is of particular importance that the option of early CCS adoption is not foreclosed given the potential to make a major contribution to climate change mitigation (albeit this potential is highly uncertain given that the first CCS demonstration project in the UK is yet to be completed).

There is also a 'Climate Change' policy that should have the effect of ensuring future decision-making seeks to minimise greenhouse gas emissions, including when giving consideration to the most appropriate locations for development. This policy approach is consistent with the NPPF, and by adding reference to 'emissions from other activities and users affected by the proposal' the policy is usefully reflecting the marine planning context. This will complement the 'Governance' policies which focused on encouraging co-existence and avoiding / minimising displacement and numerous sectoral policies that aim to ensure spatial conflict / displacement is minimised. A particularly important consideration is the need to avoid the unnecessary lengthening of shipping routes as this would lead to increased greenhouse gas emissions.

Within CC2 there is also a reference to 'mitigation measures', the value of which is less clear. It is assumed that this is suggesting that developments may be able to offset their carbon emissions (e.g. through providing funding for a renewable energy project) rather than minimise them. Further clarification would be useful.

In terms of climate change mitigation, there are perhaps two further points of note:

- 1) The Plans include two policies dedicated to 'Oil and Gas'. The first seeks to ensure protection of licensed oil and gas areas, and the second sets out a presumption in favour of new oil and gas exploration subject to impact mitigation. It is not anticipated that this policy approach will hinder renewable energy / CCS roll-out (i.e. as a result of spatial conflicts).
- 2) The Plans are likely to have significant effects in terms of the ecological integrity of the marine environment, which in turn has important implications for rates of carbon sequestration by marine organisms. More detail on effects to the functioning of the marine environment can be found within the 'Ecology' section of this report.

Shifting patterns of economic activity could also contribute to localised air quality problems or worsen air quality in areas where it is already a problem. This could particularly be the case around the major ports (which are centres of activity that the Plan seeks to protect through a dedicated policy). However, it is not possible to determine likely significant effects with any certainty.

On balance, the plans are unlikely to have any significant impact on air quality or on climate change in the short-term; however, in the medium-term there may be a minor positive effect on the baseline in terms of climate change as a result of increased deployment of offshore wind. In the longer term, this support and encouragement for wind energy in the East Plan areas should help to ensure that electricity generation from renewable sources increasingly replaces energy generation from fossil fuels nationally. In terms of other climate change mitigation initiatives, the plans are less likely to have a significant effect. Similarly, the plans are unlikely to lead to significant effects in terms of air quality.

The first two sentences of Policy CC2 currently read: *‘Proposals for development should minimise as far as practicable emissions of greenhouse gases. Mitigation measures will also be encouraged.’* For clarity, consider referring to ‘carbon offsetting’ rather than ‘mitigation measures’. Specifically, that the first two sentences could read: *‘Proposals for development should minimise as far as practicable emissions of greenhouse gases. Carbon offsetting measures will also be supported where [necessary, / appropriate].’*

### 4.3.3 Mitigation/Recommendations

| Policy | Recommendation for mitigation/enhancement   | Outcome for East marine plans   |
|--------|---|---|
| CC2    | <p>The first two sentences <u>currently</u> read: <i>Proposals for development should minimise emissions of greenhouse gases as far as is appropriate . Mitigation measures will also be encouraged where emissions remain following minimising steps.</i></p> <p>For clarity, consider referring to ‘carbon offsetting’ rather than ‘mitigation measures’.</p> <p>The first two sentences <u>could</u> read: <i>Proposals for development should minimise as far as practicable emissions of greenhouse gases. Carbon offsetting measures will also be supported where [necessary, / appropriate].</i></p> | <p>The supporting text adds clarity.</p> <p>The approach taken to mitigation of climate change here is in terms of accounting for and / or reducing:</p> <ul style="list-style-type: none"> <li>a) emissions directly related to the activity proposed (including greenhouse gases directly associated with construction, operation and/or decommissioning where appropriate);</li> <li>b) emissions indirectly related to the activity proposed (for example, increased journey length for vessels arising from development);</li> <li>c) impact the activity may have on measures already in place as part of reducing greenhouse gas emissions (for example, carbon offsetting measures or incorporation of renewable energy generation).</li> </ul> |

### 4.3.4 Relevant post-consultation changes to the Marine Plans and Sustainability Appraisal

#### Post-Consultation Appraisal: Air and climate

Changes made to the marine plans subsequent to the draft plan consultation (July-October 2013) have relatively minor implications for air and climate. As such, the differences between the appraisal findings presented above and those presented in the draft SA Report (July 2013) are minor. The recommendation presented above is the same as that made within the draft SA Report, i.e. it remains outstanding. The following provides a summary consideration of relevant changes to the marine plans for this appraisal topic.

#### General changes to plan policies, objectives, and related justification/policy context wording

A number of plan policies of relevance to this topic (e.g. see CC2, GOV3, TIDE1, CCS1) now require a clear staged approach to the consideration of effects. Broadly, the policies establish that proposals should demonstrate how they would a) avoid, b) minimise or mitigate, or c) set out a case for proceeding where residual effects remain. In response to consultation feedback on the marine plans,

stage b (minimise or mitigate) has been split to initially minimise and then mitigate, introducing a new stage to the policy consideration. If the policies are used hierarchically as suggested, then it should encourage the adoption of measures to minimise impacts prior to proceeding with mitigation. This approach is supported from an ‘air quality and climate change’ perspective.

**Relevant Changes to specific plan policies, objectives, and related justification/policy context wording (emphasis reflects major changes)**

**EC3:** Proposals that will help the East marine plan areas to **contribute** to offshore wind energy generation should be supported.

*The policy previously referred to proposals that will contribute substantially. The change made is positive from a climate change mitigation perspective.*

## 4.4 Communities and Health

### 4.4.1 Appraisal Table

Table 4-4: Appraisal Summary Table for Communities and Health –East marine plans January 2014

|  |   |   |  |
|--|---|---|--|
| Relevant Marine Plan Objectives                                  | Objectives: 1, 2, 3, 4, 5, 9  |   |  |
| Relevant Marine Plan Policy Areas                                | Section 3.1: Economic<br>Section 3.2: Social and Cultural<br>Section 3.3: Environment<br>Section 3.4 Climate Change   |   | Section 3.15: Fisheries<br>Section 3.17: Tourism and Recreation    |
| Relevant Marine Plan Policies                                    | <b>Policies which augment or provide new policy definition</b>  |   | <b>Policies which reaffirm existing policy/planning mechanisms</b> |
|  | ECO1<br>SOC1, 2<br>CC1  | FISH1-2<br>TR1-3  | EC1-3<br>ECO2  |
| Potentially Sensitive Receptors                                  | Declining fishing and other traditionally skilled communities<br>Low paid, low skill workers, unemployed and under-employed people in coastal communities<br>Ageing coastal communities, disabled people, people with long term health conditions<br>Households affected by multiple forms of deprivation |   |  |
| Current and future baseline conditions in absence of Marine Plan | Current   | <ul style="list-style-type: none"> <li>▪ Some coastal communities adjacent to the plan area are amongst the most deprived in England.</li> <li>▪ Several towns have lost their primary industries and are facing challenges to identify new ones. In particular, fishing has declined as a significant employer.</li> <li>▪ The coastline provides for a variety of tourist and recreation activities although this is predominantly limited to a short season from April to August. Notwithstanding, this sector is of crucial importance to numerous communities including those where there are existing issues around social wellbeing and health.</li> <li>▪ A lack of high skilled and well-paid jobs contributes to a ‘brain-drain’ from the region, which perpetuates deprivation. A high number of young people are not in education, employment or training.</li> </ul> |  |

Future

- The fishing industry and fishing more widely contributes to social and heritage value; however an erosion of 'way of life' associated with declining fishing communities is predicted to continue.
- Economic investment in enterprise zones and regeneration initiatives is likely to lead to a rise in employment, which may address existing income and employment deprivation. It may in turn impact on reducing existing health deprivation.
- New employment creation in the wind energy sector will help address existing income and employment deprivation; however, there are question marks around the nature of jobs that will be created. Without training and re-skilling many jobs will not be accessible to those who need them the most.
- The overall trend of an ageing population is likely to continue and result in an increasing proportion of the population of coastal communities comprising older and disabled people, and people with long-term health conditions. This is likely to increase the proportion of households who are particularly vulnerable to flooding and other adverse climate change risks facing coastal communities.
- Overall trends of health and wellbeing are likely to worsen, influenced by sluggish economic growth and widened economic divides affecting standards of living.

| Likely changes in baseline conditions as a result of East marine plans adoption | Within plans review period (to 2019)   | Within currency of plans (to 2033) | Beyond currency of plans (>2033) | On balance, the East marine plans should have a positive effect as a result of targeted efforts to stimulate economic activity that could benefit communities in need of regeneration, as well as policies that will ensure that economic activities currently of importance from a community perspective are protected, including fishing where this is appropriate.. |
|---|--|------------------------------------|----------------------------------|--|
| <i>Significance of change</i>   | +  | +                                  | +                                |  |
| <i>Reversibility of change</i>  | R  | R                                  | R                                |  |
| <i>Certainty</i>  | L  | L                                  | L                                |  |
| Cumulative Impacts Consideration  | The future success of communities along the coastline of the East Plan area will to a large extent be dependent on factors unrelated to marine planning. For example, there are well understood problems of economic peripherality and low education and skills attainment that are holding back local economies and contributing to multiple deprivation. There is a good chance that the East marine plans will contribute to improved 'joined-up thinking' at sub-regional scales – in particular around the Humber – that will lead to other initiatives coming forward. This positive cumulative effect could well be significant.  |                                    |                                  |  |
| Uncertainties   | With the exception of certain activities (and those covered by marine plan policies which may be spatially represented, e.g. in policy maps), the location and timing of many marine activities is not known, and importantly, the location and timing of associated terrestrial development for these activities is also not known. Therefore it is difficult to ascertain in which areas and communities the effects from marine activities will be most evident and where opportunities to address social and health issues will be realised. Also, it is not possible to be certain regarding the approach that will be taken by commercial operators towards investment in skills, towards recruitment strategy and procurement and use of sub-contractors. This will be significant in determining how far these activities will contribute to addressing employment, income and health deprivation. |                                    |                                  |  |



## 4.4.2 Discussion

The plans are set to focus on promoting and supporting economic activities that will build on the existing strengths of coastal communities adjacent to the plan areas and address particular socio-economic problems being faced. Policy EC2, in particular, refers to the need to support: *'...additional employment benefits... particularly where these benefits have the potential to meet employment needs in localities close to the marine plan areas.'*

More specifically, the nature of the economic growth that will be stimulated as a result of the East marine plans is likely to result in benefits to communities. It is anticipated that growth in the wind energy sector will benefit communities, including communities in need of regeneration around the Humber Estuary and at Great Yarmouth / Lowestoft. Growth in wind will primarily be driven by national policy and market interventions, though the supportive policies in the plans will encourage growth also, at least in the longer term. Assuming that maintenance and operations activities choose to locate nearby (an assumption that may or may not hold true), then the effect should be to create a good range of employment including opportunities for those with lower skill levels.

Having discussed the direct 'community' effects associated with growth in the wind energy sector, it is important to consider secondary effects including effects that relate to the way in which other economic sectors are affected. Such effects are difficult to predict with accuracy given that the East marine plans are the first of their kind in England (and given that plan effects on the offshore wind sector are themselves less than certain). With this in mind, one sector where current activity could be affected due to an assumed increase in offshore wind (due to policies within the plan) is shipping and ports. This reflects the fact that wind farm developments have the potential to affect shipping routes. Any effects will be mitigated to a considerable degree by application of the protective policies in the plan. Indeed, given the protective policies within the plan it is possible that the overall effect of the plan on ports and shipping could be positive relative to the baseline (i.e. a future situation where wind development comes forward without these protective policies in place). Furthermore, any negative effects on the ports and shipping sector will be to some extent offset by the increase in port-related activity resulting from the growth of offshore wind. Any impact to the ports and shipping sector along the East Plan Areas coastline would be of some concern for 'communities and health' given identified localised problems of unemployment and related deprivation. Ports and shipping activity can have high local effects as labour catchments tend to be relatively local and there is demand for lower skilled labour, meaning that jobs are accessible for workers who tend to be at increased risk of unemployment. As mentioned above, the potential growth of the offshore wind industry as a result of the East marine plans may also result in similar labour utilisation benefits. It is also worth noting that those plan policies that encourage integration between marine and terrestrial plans should help ensure that economic initiatives lead to benefits for coastal communities.

In terms of other economic sectors which relate closely to 'communities and health', fishing is a key consideration. Fishing provides high-quality employment for people across all skills levels and is of great social value to particular communities. Dependence on fishing for employment can be as high as 20% in some communities; and these communities (although not large or numerous) can tend to be economically peripheral / lack alternative occupations. Implementation of the 'Governance' policies should mean that displacement of fishing by unplanned development is avoided and successful co-location achieved. It is not possible to 'drill-down' further and identify effects at more local scales at this stage due to a lack of locally specific evidence.

Similarly, economic activity in relation to tourism and recreation is an important consideration given that this is central to the economy of some of the less affluent areas along the coastline where socio-economic problems can stem from underemployment / seasonal unemployment. Again, the plan policies aim to ensure no significant negative effect on tourism and recreation. Policy TR3 is of importance as it seeks to ensure support is given to proposals that *'deliver tourism and/or recreation related benefits in communities adjacent to the East Marine Plan areas'*. The supporting text helpfully refers to the importance of 'diversifying' tourism and also lists some tourism related development that could potentially be supported.

It is also important to note that the 'Social' policies (SOC 1 – 3) are important for communities and health given that they reflect the importance of maintaining access to the coast and marine area, protection of heritage assets and protection of local character. Having said this, these issues are somewhat indirectly related to the key issue of needing to address/avoid deprivation and entrenched inequality.

Another important policy is CC1, which is dedicated to ensuring that due consideration is given to climate change adaptation considerations. This could have important implications for community and wellbeing in the long term, particularly given the concentrations of elderly people along the coastline (who may be vulnerable to the effects of climate change, particularly flooding events). Having said this, the key mechanism for ensuring the well-being of coastal communities in the face of climate change is the EA's Flood Risk and Coastal Management (FRCM) role, as implemented through SMPs and Catchment Flood Management Plans (CFMPs).

On balance, the East marine plans should have a positive effect on coastal communities and health as a result of targeted efforts to stimulate economic activity that could benefit communities in need of regeneration, as well as policies that will ensure that economic activities currently of importance from a community perspective are protected, including fishing.

### 4.4.3 Mitigation/Recommendations

| Policy | Recommendation for mitigation/enhancement  | Outcome for East marine plans   |
|--------|--|---|
| EC2    | Consider rewording Policy EC2 so that there is a clear emphasis on the need to favour economic activities where they are in-line with established objectives for overcoming socio-economic problems associated with localities (with a view to reducing inequality between communities). | No change made. The policy is written in such a way that it recognises that areas adjacent to the Marine Plan areas differ greatly. |

### 4.4.4 Relevant post-consultation changes to the Marine Plans and Sustainability Appraisal

#### Post-Consultation Appraisal: Communities and health

Changes made to the marine plans subsequent to the draft plan consultation (July-October 2013) have relatively minor implications for communities and health. As such, the differences between the appraisal findings presented above and those presented in the draft SA Report (July 2013) are minor. The recommendation presented above is the same as that made within the draft SA Report, i.e. it remains outstanding. The following provides a summary consideration of relevant changes to the marine plans for this appraisal topic.

#### General changes to plan policies, objectives, and related justification/policy context wording

A number of plan policies of relevance to this topic (e.g. see GOV3, PS3, FISH1 and FISH2) now

require a clear staged approach to the consideration of effects. Broadly, the policies establish that proposals should demonstrate how they would a) avoid, b) minimise or mitigate, or c) set out a case for proceeding where residual effects remain. In response to consultation feedback on the marine plans, stage b (minimise or mitigate) has been split to initially minimise and then mitigate, introducing a new stage to the policy consideration. If the policies are used hierarchically as suggested, then it should encourage the adoption of measures to minimise impacts prior to proceeding with mitigation. This approach is supported from a 'communities and wellbeing' perspective.

**Relevant Changes to specific plan policies, objectives, and related justification/policy context wording (emphasis reflects major changes)**

**EC2:** Proposals that provide additional **employment benefits** should be supported, particularly where these benefits have the potential to meet employment needs in localities close to the marine plan areas.

*The policy previously referred to 'sustainable' employment benefits. Given that the supporting text includes in-depth discussion around what is meant by 'sustainable' employment benefits, the merits of removing the word 'sustainable' are not clear. The supporting text explains that sustainable employment benefits will be those that reflect social and economic considerations, as well as economic considerations. The text identifies that Local Plans will play an important role in terms of identifying employment needs and priorities.*

**TR1:** Proposals for development should demonstrate that during construction and operation, in order of preference:

- a) they will not adversely impact tourism and recreation activities
- b) how, if there are adverse impacts on tourism and recreation activities, they will minimise them
- c) how, if the adverse impacts cannot be minimised, they will be mitigated
- d) the case for proceeding with the proposal if it is not possible to minimise or mitigate the adverse impacts.

*The reference to the 'operation' phases is new, and is welcomed from a 'communities and health' perspective.*

## 4.5 Cultural Heritage

### 4.5.1 Appraisal table

**Table 4-5: Appraisal Summary Table for Cultural Heritage –East marine plans January 2014**

|                                   |   |   |
|-----------------------------------|---|---|
| Relevant Marine Plan Objectives   | <b>Objectives:</b> 3, 4, 5, 7,11  |   |
| Relevant Marine Plan Policy Areas | Section 3.1: Economic<br>Section 3.2: Social and Cultural<br>Section 3.3: Environment<br>Section 3.5: Governance<br>Section 3.10: Carbon Capture and Storage<br>Section 3.7: Oil and Gas<br>Section 3.8: Offshore Renewable Wind Energy | Section 3.9: Energy Production – Tidal Stream and Wave<br>Section 3.14: Subsea Cabling<br>Section 3.13: Aggregates<br>Section 3.12: Dredging and Disposal<br>Section 3.15: Fisheries<br>Section 3.16: Aquaculture<br>Section 3.17: Tourism and Recreation |
| Relevant Marine Plan              | <b>Policies which augment or provide new policy definition</b>  | <b>Policies which reaffirm existing policy/planning mechanisms</b>  |

|  |   |  |  |   |
|--|---|--|--|---|
| Relevant Marine Plan Objectives                                  | <b>Objectives:</b> 3, 4, 5, 7,11  |  |  |   |
| Policies   | SOC1-3<br>GOV1-3<br>CCS2<br>WIND2<br>TIDE1<br>CAB1  | AGG3<br>FISH1<br>AQ1   | EC3<br>BIO1<br>OG1-2<br>WIND1<br>AGG1,2<br>DD1 |   |
| Potentially Sensitive Receptors/ Receptor Groups                 | <p>Protected wreck sites and military remains are subject to legislative protection.</p> <p>Submerged archaeology which may be damaged (or discovered) or moved by construction activity, dredging/trawling or changes in current/sedimentation patterns.</p> <p>Submerged palaeo-landscapes and deposits within them may be damaged by construction or dredging/trawling activity.</p> <p>Coastal designated assets (Scheduled Monuments, Listed Structures, historic landscape/ seascapes) which may be directly damaged or may have their settings indirectly affected by marine activity.</p> <p>Coastal archaeological sites and finds which may be directly damaged or may have their settings indirectly affected by marine activity.</p> <p>Coastal socio-cultural connections which may be diminished as a result in a change in activities.</p> |  |  |   |
| Current and future baseline conditions in absence of Marine Plan | Current   | <ul style="list-style-type: none"> <li>▪ The waters in the plan area are rich in heritage assets, ranging from prehistoric artefacts and former land surfaces now submerged to modern wrecks and the remains of WWII aircraft.</li> <li>▪ Statutory designations cover a relatively small proportion of remains, with most sites not benefiting from formal protection. There are just two protected wrecks and five protected military remains in and adjacent to the East of England marine plan areas.</li> <li>▪ The Valletta Convention provides over-arching protection for all archaeological remains and their context, including those found underwater. This is reiterated in the MPS.</li> <li>▪ Deterioration of assets is occurring over time through the action of weather, waves, tides, currents and biological activities. Accidental disturbance to, or destruction of, individual sites from human activities is also likely to occur on a sporadic basis.</li> </ul> |  |   |
|  | Future  | <ul style="list-style-type: none"> <li>▪ In the absence of actions to protect archaeological resources in the coastal and offshore zones it can be assumed that in areas other than those experiencing net sediment accretion, they will experience deterioration over time.</li> <li>▪ Remains close to the coast and those comprising fragile materials are those most likely to be lost.</li> <li>▪ The current protection regime will continue to reduce the level of harm to the resource arising from human activities and also enables voluntary agreements with developers whereby sites that are discovered during the delivery of works are then avoided.</li> <li>▪ It is recognised that our knowledge is likely to increase as a result of research and the activities which occur in the marine area.</li> <li>▪ The provisions of the MPS regarding heritage would provide some overarching protection.</li> </ul>  |  |   |
| Likely changes in baseline conditions as a                       | <b>Within plans review period (to 2019)</b>   | <b>Within currency of plans (to</b>  | <b>Beyond currency of plans</b>                | Offshore wind development and aggregates extraction may increase slightly as a result of East marine plans adoption notably in known areas of |

| Relevant Marine Plan Objectives      | Objectives: 3, 4, 5, 7,11  |              |                   |  |
|--------------------------------------|--|--------------|-------------------|--|
| result of East marine plans adoption |  | <b>2033)</b> | <b>(&gt;2033)</b> | heritage potential (e.g. Dogger Bank) although this is not certain. An increase may result in greater effects on heritage assets although new policy (especially SOC2 which seeks to ensure that heritage assets are not compromised by development in the first instance) would help to mitigate and or avoid this. |
| <i>Significance of change</i>        | <b>+/-</b>   | <b>+/-</b>   | <b>+/-</b>        |  |
| <i>Reversibility of change</i>       | <b>R</b>   | <b>R</b>     | <b>R</b>          | However, this is uncertain and it is not possible to say that one effect would balance the other.  |
| <i>Certainty</i>                     | <b>L</b>   | <b>L</b>     | <b>L</b>          | Consequently, both positive and negative effects have been assigned relative to the as to the business as usual.   |
| Cumulative Impacts Consideration     | <p>Cumulative effects are a consideration of the East marine plans through policy ECO1, both in decision making and in the implementation of the East marine plans. Moreover, cumulative effects are highlighted as a key area of study in the MMO Strategic Evidence Plan and any evidence that emerges from related studies will inform the plans (see Objective 11 of the East marine plans document).</p> <p>With regard to the protection of heritage assets, the East marine plans largely re-affirm existing policy and planning mechanisms. For example the Valletta Convention, the UNESCO Convention on the Protection of Underwater Cultural Heritage and the North Sea Prehistory Research and Management Framework (see Annex H). The UK also has a number of legal instruments to protect statutory marine and terrestrial heritage and the principles of the Valletta Convention are also re-iterated in the MPS. Whilst the East marine plans do not attempt to replicate the details of these documents, it aims to be consistent with them and re-affirms their key messages in principle.</p> <p>There is the potential for cumulative effects to arise for this SA topic by the expansion of certain activities, for example, areas covered under policy TIDE1, but which may also be subject to aggregate extraction through policy AGG3, and later AGG1-2. As these policies augment existing provisions, there could be said to be cumulative effects potentially arising from the adoption of the plan. However, it is considered that the existing heritage protection provisions in place together with the new policy in the East marine plans (discussed below) would be sufficient to mitigate this.</p> <p>Similarly, policies EC3 and WIND 1-2 promote wind in the marine plan areas. Whilst wind energy developments could lead to cumulative effects with regards to physical disturbance, including in relation to any ancillary/associated development in the offshore and inshore areas, and at the coast, it cannot be regarded with any certainty that the plan will either abate or exacerbate such effects although the policy provisions identified should again work to mitigate this uncertainty. Nonetheless, cumulative effects should be an important consideration for project level assessment, and in any future plans or programmes subject to SEA (e.g. further offshore renewables leasing).</p> |              |                   |  |
| Uncertainties                        | <p>With the exception of certain activities (and those covered by marine plan policies which may be spatially represented, e.g. in policy maps), the location and timing of many developments is not known, and there will still be a reliance on project-level assessment to consider the implications of any given development on heritage assets. Similarly, the location and extent of heritage assets is largely unknown and few assets are offered formal protection. Also, it is not certain that the East marine plans will definitely result in a greater degree of offshore wind and aggregates extraction compared with the no plan option.</p>   |              |                   |  |

## 4.5.2 Discussion

The East marine plans contain policies which both provide protection to heritage assets and also promote activities which may result in harm to heritage assets. Many of these re-affirm existing policy such as, for example, those relating to the on-going role of the oil and gas development. Similarly, EC3 gives support to offshore wind expansion in the East of England, WIND 1 protects sites under lease from the Crown Estate for wind energy development and AGG2 seeks to protect aggregates sites subject to abstraction licenses. Each of these activities has potential to result in damage to heritage assets and, whilst these policies largely re-affirm existing policy/planning mechanisms, some augment existing policy such as those which seek to avoid sterilisation of tidal power potential and fishing grounds and policy CAB1 which encourages the burying of cables within the seabed. In particular the plans promote the importance of offshore wind activity and aggregates extraction. Offshore wind development has the potential to increase as a result of the plans compared with the situation without them, although this is not certain. This may occur in the Hornsea and Dogger Bank areas and aggregates extraction may increase in the areas between the Hornsea and East Anglia zones as a result of plan policies, although such an additional deployment cannot be confirmed. The shallow sand banks of the North Sea are known to have heritage potential, although this should be caveated with the fact that as yet undiscovered heritage assets may also exist in other areas. Whilst all of these activities have the potential to harm heritage assets, there are a number of controls in place both within the East marine plans and already in existence. Indeed, controls are already in place to protect heritage assets which would continue, for example, the requirement for project-level Environmental Impact Assessments (EIAs), legal protection for some wrecks and military remains, existing guidance on the assessment of cumulative effects on the historic environment. Protocols also exist for heritage and aggregates extraction from the British Marine Aggregates Producers Association (BMAPA)<sup>30</sup>. It should also be noted that that BMAPA and others undertook the Regional Environment Characterisations which included a characterisation of and search for heritage assets in prospective aggregates areas.

Some policies which promote activities seek to further clarify and add value to existing policy, including giving a sub-national expression to national policy. TIDE1 seeks to ensure that future tidal power developments would not be compromised by intervening activities. CAB1 reflects the requirements of the MPS and promotes the burying of cables in the seabed. AGG1 and 3 seeks to promote aggregates extraction areas and prevent future sterilisation of resources. FISH1 also introduces a new requirement in line with the MPS and seeks to prevent fishing activities from being displaced by following a sequence of policy clauses – it is assumed that this includes benthic trawler fishing. AQ1 makes similar provisions with regard to sites for aquaculture development. Each of the above activities has potential to result in significant adverse effects to heritage assets if developed inappropriately. Some of these activities are likely to require EIAs which should help to avoid adverse effects on heritage assets, notably tidal power schemes and

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<sup>30</sup> Guidance notes for the aggregates industry have been formally published (BMAPA & English Heritage 2003) covering legislation, statutory controls, possible effects of aggregate extraction, obtaining archaeological advice, application procedures, assessment, evaluation, archaeological investigation, mitigation, and monitoring. An equivalent guide was published for Irish waters but the majority of the information and advice is applicable to operations in the UK. COWRIE (2008 and 2010) has also produced guidance on the assessment of cumulative impacts on the historic environment arising from offshore renewable energy projects. The guidance focuses on key elements of the cumulative assessment process, including an integrated approach, consideration of other actions, scoping, baseline study, impact dimensions, constraints, mitigation, monitoring and management, and communication. Further guidance on this from Renewables UK is anticipated.



aquaculture projects. Similarly, the aggregates industry already follows the BMAPA guidance identified above.

There are a number of other policies which may interact with AGG3. The area of potential aggregate resource overlaps with the largest area of potential tidal stream resource identified in policy map TIDE1. While aggregates extraction is unlikely to sterilise this area for tidal technology, the reverse is likely to be true at least for the life of any tidal project. Securing tidal development through safeguarding the potential tidal resource (under TIDE1) would present the applicant and decision maker with a range of considerations relevant to heritage. Safeguarding of the tidal resource area from fixed infrastructure would mean the seabed would effectively be protected from potentially damaging activities such as cabling, pipeline routeing and fixed installation (e.g. oil & gas/CCS related, or out of round wind farms). However, physical impacts from these activities are spatially and temporally discrete, transient activities that could still take place in the area of tidal resource are likely to include fishing and aggregate extraction, which can have a greater impact on seabed heritage assets. However, unless activities are displaced to this area as a result of the adoption of the plans, or aggregates licences are preferentially secured prior to tidal development (note that aggregate extraction is subject to project level permitting) it cannot be determined with any confidence that the policy outcome will be significantly different in the area covered by TIDE1 for this SA topic.

The proposals that presume in favour of cable installation where they are buried (CAB1) are likely to lead to a rise in cables being buried and hence increase the risk of damaging as yet undiscovered heritage assets. However, the existing licensing and lease process requires heritage assets to be considered through this process. Benthic trawling can also damage heritage assets on the sea bed (but, as with aggregates extraction can also increase our knowledge of the historic environment by surfacing finds). FISH1 seeks to ensure fishing activity is not compromised without due consideration to the factors proposed. Whilst fishing is relatively unregulated in terms of heritage protection, it is not considered that the levels of benthic trawling would necessarily increase under this policy nor would new fishing grounds that have not previously been trawled necessarily be promoted.

GOV2 seeks to promote co-location of activities where possible (and subject to the requirements of the EIA Directive). GOV3 seeks to ensure that proposals identify the likelihood of displacement of other activities. Given there remains the likelihood of significant unknown heritage assets under the Southern North Sea, it is not possible to predict whether either policy would increase or decrease the level of risk. This uncertainty is, to an extent, mitigated by the reference in GOV2 to the EIA Directive which encourages cumulative and secondary/indirect effects to be adequately considered in EIAs.

The East marine plans also contain a number of policies which offer protection to heritage assets either directly or indirectly. Some of these seek largely to re-affirm existing policy mechanisms. BIO1 seeks for development to avoid harm to biodiversity interests including, specifically, habitats which are protected. Indirectly, this policy is likely to afford some protection to any heritage assets which are also located within these sites. For example, it is known that the Dogger Bank SAC is an important location in terms of marine heritage. The supporting text to DD1 reiterates that for consents for navigational dredging, relevant protocols should be followed and the approach should be justified. This should include consideration of the marine environment as per the MPS provisions which should in turn include appropriate consideration of heritage assets. Principally, SOC2 makes specific provision for consideration of heritage assets by stating that, in order of preference, proposals will not compromise or harm the asset, otherwise impacts will be minimised and mitigated or if this is not possible the case for proceeding should be justified. The supporting text to the policy states that the aim of this policy is to ensure that existing marine and coastal heritage assets are protected from developments and other activities or management measures that may have a detrimental impact upon them. In

the supporting text, the requirements of the MPS are re-iterated in terms of the need to conserve and manage assets (including those without formal designation) in recognition to the overall contribution to the historic environment – this includes the contribution to societal benefits. It also requires the consideration of available evidence and advice from the relevant regulator in relation to the significance of the assets and how they are managed. The policy is simpler than earlier versions and places more emphasis on the supporting text to provide details. The wording appears to conform with the requirement to avoid substantial harm to heritage assets as stated in the NPPF. The East marine plans should be read in their entirety and each policy should also consider the provisions of SOC2. Policy SOC2 also sits beneath the Objective 5 which states, “*To conserve heritage assets and ensure that consider the character of the local area*”. Other policies offer indirect heritage protection through consideration of other issues, such as BIO1 regarding marine ecology, SOC1 regarding coastal access and GOV3 seeking to ensure that the impacts of displacement of activities are also considered. Information under Objective 11 of the plans document relates to the need to improve the gathering, sharing and monitoring of evidence to support development, together with partnering to help achieve this; all of which would greatly help our understanding of the marine historic environment.

CCS2 supports CCS where oil/gas infrastructure is re-used. This would help to reduce the possible adverse effects on heritage on the development of new infrastructure. WIND1 and WIND2 support wind development in established leased areas and in cases where the established ZAP process (or equivalent zone appraisal) is applied. This would include consideration of heritage assets.

On balance, therefore, it is considered that whilst the East marine plans may result in some additional offshore wind and aggregates extraction activity which could cause harm to heritage assets (and port and shipping development may have a minor decline over the plan period), this is uncertain. The plans also include a number of policy measures to protect heritage which add to the existing protection in the MPS and other mechanisms. If the East marine plans do encourage further growth in both the offshore wind and aggregate extraction sectors it is anticipated that the above policies included in the East marine plans will help to mitigate any additional negative impacts on heritage assets that might result from this additional growth.

There is uncertainty as to whether or not development occurring above the baseline as a result of the presence of East marine plans would necessarily coincide with heritage assets. The policies contained within the East marine plans afford consideration to negative impacts upon heritage assets. However, it is not possible to say categorically whether one effect would balance the other and monitoring will be required to determine this in the future.

### 4.5.3 Mitigation/Recommendations

A number of recommendations were made to mitigate any adverse effects identified or enhance the East marine plans at earlier stages of the SA. No further recommendations have been made at this stage.

### 4.5.4 Relevant post-consultation changes to the Marine Plans and Sustainability Appraisal

#### Post-Consultation Appraisal: Cultural Heritage

Changes made to the marine plans subsequent to the draft plan consultation (July-October 2013) have very minor implications for Cultural Heritage. As such, the differences between the appraisal findings presented above and those presented in the draft SA Report (July 2013) are minor. The



following provides a summary consideration of relevant changes to the marine plans for this appraisal topic.

**General changes to plan policies, objectives, and related justification/policy context wording**

A number of plan policies of relevance to this topic involve a staged approach to considering their potential effects (e.g. see GOV3, WIND1, TIDE1, DD1, AGG3, CAB1, AQ1) which broadly set out that proposals should demonstrate how they would a) avoid, b) minimise or mitigate, or c) set out a case for proceeding where residual effects remain. In response to consultation feedback on the marine plans, stage b (minimise or mitigate) has been split to initially minimise and then mitigate, introducing a new stage to the policy consideration. As both minimisation and mitigation of effects was a consideration of the draft policies, there are few individual policy implications with regards to the change on this SA topic. If the policies are used hierarchically as suggested, then it should encourage the adoption of measures to minimise impact prior to proceeding with mitigation, and that these should be demonstrated to the relevant authority.

**Relevant Changes to specific plan policies, objectives, and related justification/policy context wording (emphasis reflects major changes)**

**SOC2:** Proposals that may affect heritage assets should demonstrate, in order of preference:

- a) that they will not compromise **or harm elements which contribute to the significance** of the heritage asset;
- b) how, if there is compromise or harm to a heritage asset, this will be minimised
- c) how, where compromise or harm to a heritage asset cannot be minimised it will be mitigated against; or
- d) the ~~case~~ **public benefits** for proceeding with the proposal if it is not possible to minimise or mitigate compromise or harm to the heritage asset.

*SOC2 has been strengthened to include the term ‘harm’ as well as ‘compromise’ – this brings the policy more in line with NPPF and makes the wording clearer in terms of avoidance of damage. It also now refers to ‘elements which contribute to the significance’ of the heritage asset and not just the heritage asset. This is considered to be stronger wording as, by default, it takes into account the setting and context of the asset and not just its physical integrity.*

## 4.6 Marine Ecology

### 4.6.1 Appraisal Table

**Table 4-6: Appraisal Summary Table for Marine Ecology –East marine plans January 2014**

|  |   |   |
|--|---|---|
| Relevant Marine Plan Objectives              | <b>Objectives:</b> 6, 7, 8, 9, 11   |   |
| Relevant Marine Plan Policy Areas by Section | 3.1: Economic<br>3.3: Environment<br>3.4: Climate Change<br>3.5: Governance<br>3.7: Oil and Gas<br>3.8: Offshore renewable wind energy<br>3.9:Tidal stream and wave | 3.10: Carbon Capture and Storage<br>3.11: Ports and Shipping<br>3.12: Dredging and Disposal<br>3.13: Aggregates<br>3.14: Subsea Cabling<br>3.15: Fisheries<br>3.16: Aquaculture |
| Relevant Marine Plan Policies                | <b>Policies which augment or provide new policy definition</b>  | <b>Policies which reaffirm existing policy/planning mechanisms</b>  |

|  |  |  |                                       |                              |
|--|--|--|---------------------------------------|------------------------------|
| (See Appendix I)   | EC1, 2<br>ECO1<br>BIO2<br>MPA1<br>CC1, 2<br>GOV1, 2, 3<br>CCS1<br>PS1, 2, 3<br>WIND2   | TIDE1<br>CAB1<br>AGG1, 3<br>FISH1, 2<br>AQ1  | EC3<br>ECO2<br>BIO1<br>CCS2<br>OG1, 2 | WIND1<br>AGG2<br>DEF1<br>DD1 |
| Potentially Sensitive Receptors/Receptor Groups                        | <ul style="list-style-type: none"> <li>Those aspects of marine ecology highlighted in Appendix D (plankton, benthos, fish and shellfish, marine reptiles, birds and marine mammals and supporting habitats)</li> <li>Associated with the above, those habitats and species protected through a range of legislation and related conservation designations (e.g. SACs, SPAs, SSSIs, MCZs).</li> </ul> |  |                                       |                              |
| Current and future baseline conditions in absence of East marine plans | Current  | <ul style="list-style-type: none"> <li>A range of relevant sites which are terrestrial, terrestrial with marine components or entirely marine are now designated in the east inshore and offshore marine plan areas. These are a combination of nationally designated areas (e.g. SSSI), European sites (e.g. SACs and SPAs) and international sites (e.g. Ramsar).</li> <li>Work is underway to identify new marine SPAs and the boundaries of some coastal and marine sites are being extended or may be extended in the future.</li> <li>The Marine Conservation Zone (MCZ) project is at a relatively advanced stage in the identification of sites (Reference Areas and MCZs), and some of these are in the east inshore and offshore marine plan areas. The first tranche of sites were designated in November 2013 following considerations made in light of public consultation on recommended MCZs. Note that none of the designated sites are in the east inshore and offshore areas .</li> <li>The coast of the east inshore marine plan area is important for seabirds and waterbirds, attracting internationally important numbers (e.g. at The Humber SPA, Gibraltar Point SPA, The Wash SPA, North Norfolk Coast SPA).</li> <li>Declines in numbers of certain bird species (e.g. kittiwake and puffin) at notable colonies such as Bempton Cliffs have occurred in recent years, in part potentially attributable to changes in climate and over-fishing.</li> <li>Some fish stocks are subject to considerable fishing pressure and the southern North Sea is regarded to have unfavourable demersal fish stocks compared to historical data. However, overall the structure of the demersal fish community has changed little or positively changed since 1999 with the exception of life history trait and composition, which can be affected by fishing activity (see Appendix D)<sup>31</sup>.</li> <li>Marine mammals including harbour porpoise, grey and harbour seals are common in the east Marine Plan areas. Marine activities in the east marine plan areas generate a combination of chronic and episodic noise which has the potential to generate behavioural and physiological effects. Connected with the above, impacts on prey species are not well understood.</li> </ul> |                                       |                              |

<sup>31</sup> Defra (2010). Charting Progress 2: An assessment of the state of UK seas. Published by the Department for Environment Food and Rural Affairs on behalf of the UK Marine Monitoring and Assessment Strategy community, London, 194pp.

Future

- Future climate change and ocean acidification are expected to affect the abundance, distribution, recruitment and migration of species.
- The MSFD requires programmes of measures to achieve or maintain good environmental status to include spatial protection measures, contributing to coherent and representative networks of MPAs. The identification of such sites (MCZs) for the southern North Sea is at an advanced stage. Other MPAs (e.g. additional SACs, SPAs) may also be designated during the life of the East marine plans and beyond.
- A combination of achieving WFD and MSFD targets will assist in achieving good ecological/environmental status across a range of habitats and species in transitional waters and at sea.
- Further revision to the Common Fisheries Policy (CFP) may result in changes to the management of commercial fisheries.

| Likely changes in baseline conditions as a result of East marine plans adoption | Within plans review period (to 2019) | Within currency of plans (to 2033) | Beyond currency of plans (>2033) | In general, policy wording reflects existing measures in place, and hence are regarded as having a neutral effect on baseline conditions in the immediate term.<br><br>Sector specific policies in some instances promote (e.g. wind) and/or safeguard areas for selected activities (e.g. CCS, tidal energy, aggregate extraction, aquaculture) and therefore have the potential to lead to activity displacement (e.g. fishing) which could have unintended ecological consequences (both positive and adverse). The degree to which this could generate significant effects on marine ecology cannot be defined with any certainty, as these changes lack temporal and spatial specificity, and the magnitude of changes to the baseline trajectory is uncertain in the medium to long term. Considered in combination with objective level (e.g. GOV2, GOV3, BIO1) and activity specific (e.g. FISH1, FISH2) policies, decision makers should consider these implications and provide suitable safeguards against this on a case by case basis, in the context of the latest evidence base (e.g. under Objective 11).<br><br>On balance, policies and supporting context/justification may augment existing policy and planning considerations during the life of the plan, for instance by enhancing the consideration and guidance in relation to cumulative effects, and by actions to assist in the achievement of Objective 11. |
|---|--------------------------------------|------------------------------------|----------------------------------|--|
| <i>Significance of change</i>   | 0                                    | +                                  | +                                |  |
| <i>Reversibility of change</i>  | NA                                   | R/IR                               | R/IR                             |  |
| <i>Certainty</i>  | H                                    | M                                  | L                                |  |

**Cumulative Impacts Consideration** Cumulative effects are a consideration of the East marine plans through policy ECO1, both in decision making and in the implementation of the East marine plans. Moreover, cumulative effects are highlighted as a key area of study in the MMO Strategic Evidence Plan and any evidence that emerges from related studies will inform the plans (see Objective 11 and related

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text, paragraphs 77-80 of the East marine plans).

There is the potential for cumulative effects to arise for this SA topic by the expansion of certain marine licensable activities, for instance areas covered under policy TIDE1, but which may also be subject to aggregate extraction through policy AGG3, and later AGG1-2. As these policies augment existing provisions, cumulative effects may potentially arise from the adoption of the plan. Though policies EC3 and WIND 1-2 promote wind in the marine plan areas, offshore wind is already of strategic importance in the southern North Sea, and Round 3 developers are either undertaking zone appraisal (e.g. ZAP), or else are in the initial stages of individual project planning (e.g. Dogger Bank Creyke Beck, Hornsea Projects One and Two, East Anglia One). Though enhanced wind deployment could lead to cumulative effects with regards to physical disturbance and noise offshore, including in relation to any ancillary/associated development in the offshore and inshore areas, and at the coast, (e.g. as considered in DECC 2011 – also see policy GOV1) it cannot be regarded with any certainty (outside of the plans support for a consideration of cumulative effects), that the plan will either abate or exacerbate such effects. As a result, cumulative effects should be an important consideration for project level assessment, and in any future plans or programmes subject to SEA (e.g. further offshore renewables leasing).

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#### Uncertainties

There is uncertainty with regard to the effects of marine activities (and global issues such as climate change) and their cumulative effects on certain species and habitats, as well as ecosystem functioning.

It is uncertain how MCZs will be considered in marine decision making, for instance compared with the established statutory process associated with Natura 2000 sites as guidance is yet to be forthcoming (see paragraph 200 of the Marine Plans). The timescales on which the remaining recommended MCZs may be designated in the plan areas is uncertain (note that further designations are expected to be made in two tranches over the next three years).

There are still gaps in knowledge with regards to the location of habitats and species of conservation interest in the marine plan areas, and therefore other areas may be afforded protection through site designation in future, either at the coast or offshore.

With the exception of certain activities (and those covered by marine plan policies which may be spatially represented, e.g. in policy maps), the detailed location and timing of many developments is not known, and there will still be a reliance on project-level assessment to consider the implications of any given development on this topic.

The supportive policies of the East marine plans suggest the potential for additional offshore renewables and aggregates that could result from increased confidence in these sectors. Uncertainty is attached to these suggestions due to a range of other, potentially more influential factors including, but not limited to, the level of government subsidy, successful HRA challenges to construction in certain Round 3 zones and the tidal resource area highlighted in the plans, socio-economic concerns related to MCZ designation (e.g. in proximity to landfall or potential cable corridors, and uncertainty related to the timetable for the delivery of such sites), and at least in the short term, any supply chain considerations, which may affect wind farm deployment.

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## 4.6.2 Discussion

Policies in the East marine plans are relevant to marine ecology either due to any influence they may have on marine activities which have the potential to generate effects (e.g. offshore wind, tidal energy, aggregates extraction), or by setting out how the environment will be considered in decision making/should be considered by project applicants. The promotion/commissioning of research to help develop the evidence base for the marine plan areas under Objective 11 (see paragraphs 77-80) is also relevant. It is acknowledged early in the plans document that they, “...do not establish new requirements but rather apply or clarify the intent of national policy to

the East Inshore and Offshore areas, taking into account the specific characteristics of the plan area” (paragraphs 4 and 82). As a result, some of the considerations assigned by the policies reflect existing policy level protection, for instance the pollution risk associated ECO2 is largely covered by existing legislative and policy level provisions, such as in relation to collision risk<sup>32</sup> and the requirement for Shipboard Oil Pollution Emergency Plans (SOPEP)<sup>33</sup>. BIO1 largely covers sites and species of conservation interest which are protected through statutory mechanisms<sup>34</sup>, though does make wider biodiversity considerations, “...reflecting the need to protect biodiversity as a whole...” consistent with MPS wording (MPS paragraph 2.6.1.1) and MSFD requirements. Other policies (e.g. WIND1-2, OG1-2) reflect potential regional resources related to these activities, though do not necessarily introduce any new requirements.

ECO1 and BIO2 have the potential to ensure that cumulative effects and good design are taken account of or encouraged respectively. With regards to the former, though cumulative effects are generally considered in project level EIA (e.g. in relation to hydrocarbon activities or offshore wind farms) and are a consideration of plan level SEA (for instance in relation to offshore energy), the MMO promote the use of the latest available guidance<sup>35</sup>, on which public authorities and nature conservation agencies can provide advice, and also states that there is, “...an expectation that more is done than is provided for in existing measures”, possibly referring to guidance and proposed research (below). Additionally, the policy states that cumulative effects are to be considered in plan implementation, reflecting the legislative requirement for the plans to be subject to Sustainability Appraisal incorporating SEA. The plans document recognises the need for research in this area, as stated in the policy justification for ECO1 (paragraph 171), in the implementation and monitoring of the plans (Chapter 4 and Objective 11) and the related Strategic Evidence Plan (SEP). The SEP outlines a need to improve the understanding of cumulative effects of multiple activities, stating this is a priority area of research over the next five years for the MMO.

It is stated in the East marine plans that they will, “...make a contribution to implementing the MSFD alongside a range of other measures...”, though it is noted that the nature of this contribution will become clear as measures for achieving GES and the East marine plans develop (East marine plans paragraph 154). It is stated elsewhere<sup>36</sup> that as the marine plans develop, “...policies...will take into account GES targets and indicators once established. Monitoring arrangements for marine plans will use the monitoring programme being put in place for GES as far as possible”. All of the MSFD descriptors for GES are relevant to this SA topic. The UK Marine Strategy Part One<sup>36</sup> includes a description of the present and projected status of UK seas (the Initial Assessment Cover Paper), as well as a description of GES characteristics, targets and indicators for each descriptor. It is expected that existing measures and commitments will largely help to achieve the GES targets, however, additional measures may be required to further reduce impacts on species and habitats from sources of effect such as

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<sup>32</sup> For instance as contained in The Merchant Shipping (Distress Signals and Prevention of Collisions) Regulations 1996

<sup>33</sup> For oil tankers of 150 tons gross tonnage or more and all ships of 400 tons gross tonnage, and an approved marine pollution emergency plan (SMPEP) for noxious liquid substances for all vessels of 150 tons gross tonnage carrying noxious liquid substances in bulk.

<sup>34</sup> e.g. International and European sites, and MCZs, and those habitats and species under Section 40 of the Natural Environment and Rural Communities (NERC) Act 2006 and Section 74 of the Countryside and Rights of Way (CROW) Act 2000 – note that these latter Acts apply out to 12nm (territorial waters) and therefore are only applicable to the east inshore marine plan area.

<sup>35</sup> RenewableUK guidance on cumulative Impact assessment. Also see MMO (2013). Evaluation of the current state of knowledge on potential cumulative effects from offshore wind farms (OWF) to inform marine planning and marine licensing. Centre for Environment, Fisheries and Aquaculture Science and PMSS for MMO. MMO Project No: 1009, 73pp.

<sup>36</sup> HM Government (2012). Marine Strategy Part One: UK Initial Assessment and Good Environmental Status, 163pp. Sustainability Appraisal of the East Inshore and East Offshore draft Marine Plans—Sustainability Appraisal Report

fishing, the spread of non-native species and litter, which are yet to be defined. Targets for some GES descriptors have also not been set where there was insufficient data or where it was not appropriate to do so. Policies such as ECO2, BIO1, BIO2, MPA1 and FISH2 have the potential to contribute to the achievement of the targets related to these descriptors where these augment existing policy or represent new policy, therefore affording additional safeguards to the receptors of this SA topic. MSFD descriptors are signposted in policy context in paragraph 157.

BIO2 is in keeping with MPS paragraph 2.6.1.4 and has the potential to “enhance” benefits to marine ecology from development proposals (i.e. incorporating elements of design which seek to have a positive effect on the marine environment rather than ones which have a neutral or negative effect), and also fulfils one of the opportunities for marine planning identified in Appendix B). The policy reflects the wording of the overarching NPS for energy (NPS EN-1), that opportunities for building-in beneficial biodiversity or geological features as part of good design should be a consideration of the decision maker, with the option of “using requirements or planning obligations where appropriate”<sup>37</sup>, and augments that of the NPPF which states that, “...opportunities to incorporate biodiversity in and around developments should be encouraged”<sup>38</sup>. The policy justification provides additional clarity to BIO2, indicating that public authorities should “look preferably” on such proposals (paragraph 189). Any offshore structure will need to meet specific technical functions relating to the type of project and its location, and the relative merits of any “enhancements” will need to be considered at the project specific level. The plans highlight that guidance on good design practice that incorporates such features may be provided by public authorities, working with the SNCBs (paragraph 191). For all developments whether within the remit of the NPSs (e.g. offshore wind, CCS projects) or NPPF, the East marine plans will complement existing policy offshore and at the coast.

Policy MPA1 places a requirement for impacts on the MPA network (MPAs – incorporating Natura 2000 sites, SSSIs, MCZs) to be taken into account at the strategic level, specifically on how any impacts might compromise the delivery of an “ecologically coherent network of sites” (i.e. as suggested as a contributory measure to achieving good environmental status in the MSFD, and as required in similar commitments regarding MPAs under international conventions such as the Convention on Biological Diversity). It is understood that isolation of the policy to strategic level assessment allows for the consideration of how the adoption of a given plan (e.g. future wind leasing, oil and gas licensing) may impact the MPA network as a whole and would incorporate a consideration of cumulative effects and interactions with other relevant plans and programmes. This is, however, restrictive with regards to certain activities, for instance no programme of SEA is undertaken for aggregates licensing<sup>39</sup> (though see below for a consideration of the implications of policies AGG1-3). The marine plans further clarify that “strategic level measures” include, “...regional environmental assessments or in assessments and measures brought forward in support of the MSFD”. In combination with BIO1, this policy may assist in meeting the statutory environmental protection obligations of relevant authorities and developers (including a consideration of areas outside of designated sites that are important for designated features, e.g. for foraging), and may represent a contributory measure to existing or future commitments made under provisions such as the MSFD.

A number of policies have the potential to generate activity displacement (also see Section 3 with regards to the comparison of displacement potential for marine Plan Options), though the scale and timing of the displacement that could arise from the adoption of the plans is uncertain.

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<sup>37</sup> Overarching National Policy Statement for Energy (EN-1), paragraph 5.3.15.

<sup>38</sup> National Planning Policy Framework, paragraph 118.

<sup>39</sup> Though no SEA programme is undertaken for aggregates, developments are subject to EIA and the industry has raised awareness of the character sensitivities of areas targeted for aggregates through the Regional Environmental Characterisation (REC) programme – see Appendix D.



The displacement of an activity from one area to another may result in unintended effects on the receiving environment (for instance, particularly in the case of marine ecology, the movement of trawling to a sensitive area – see below), unless suitable mitigation is available. For the most part, activity level permitting should allow such impacts to be avoided for marine ecology – the socio-economic consequences of displacement are considered elsewhere (see Sections 4.4 and 4.7). In addition to the requirements of EIA, the East marine plans include objective level policies which encourage co-location wherever possible (e.g. GOV2), and the consideration of displacement effects (e.g. GOV3, FISH1), encouraging the possibility of activity co-location (a priority area of research for the MMO<sup>40</sup>) and/or mitigation. Considered in combination with the policies discussed above (BIO1, BIO2, MPA1) and existing provisions; strategic level plans and development level proposals should adequately consider their impact on the receiving environment.

Certain activities are already being promoted (such as offshore wind in Round 3 zones) or have a highly restricted resource (TIDE1) and their likely future locations may be anticipated, whereas the location of other activities is less certain despite some understanding of the potential resource distribution (e.g. carbon transport and storage, future gas field development, marine aggregates) and others are ongoing but more spatially extensive (e.g. fishing). Policies CCS1, AGG3, WIND1 and TIDE1 seek to safeguard resources by working a consideration of activity compatibility into decision making (in keeping with GOV2) rather than making any particular area an exclusion zone. For this reason it is not regarded possible to make a definitive judgement on the level of potential displacement resulting from the adoption of the plans. Despite this uncertainty, effects for marine ecology directly related to the plans may arise from any change in scale or location of activities related to these policies, or indirectly through related activity displacement. The East marine plans should contribute to, or at least reaffirm, policies related to environmental protection. For offshore wind, the policy justification/explanation for EC3 indicates that the optimisation of OWF locations and deployment methods can be used to help minimise environmental impacts. This is likely to be informed at the early stages of OWF planning through the ZAP or equivalent process (a condition of the support indicated in policy WIND2) and in the preparation of project level EIA.

Policies relating to wind and tidal energy, and aggregates have the potential to enhance development through increasing industry confidence. This must be considered in the context of other factors affecting industry confidence (e.g. for renewables, changes to government subsidy, successful HRA challenge to construction where relevant), as well as any given project meeting development level consenting requirements. Any additional wind deployment resulting from adoption of the plans increases the potential for displacement, cumulative effects and has resultant implications for marine ecology from, for instance, installation noise<sup>41</sup> and physical presence<sup>42</sup> unless suitably mitigated. Existing consenting, and plan (e.g. offshore wind and tidal energy) and project level assessment will assess these implications, and the East marine plans should contribute to or reaffirm policies which offset potential negative effects through the implementation of, amongst others, BIO1, BIO2, MPA1 and GOV2. It should be noted that parts of the resource areas indicated on policy maps for WIND 1 and 2 (Figure 15), TIDE 1 (Figure 16) and AGG3 (Figure 21) overlap with existing (SACs, SPAs) and recommended (rMCZ) conservation sites (see Appendix D). The potential effect of any wind development, aggregate extraction or tidal device installation and operation on these sites must be considered, and will

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<sup>40</sup> One of the Strategic Evidence Plan (SEP) priority areas for research in 2011 to 2015. See also MMO (2013). Evaluation of the potential for co-location of activities in marine plan areas. Cefas for MMO. MMO Project No: 1010, 98pp.

<sup>41</sup> For example see: Richardson *et al.* (1995), Nedwell *et al.* (2007), Southall *et al.* (2007)

<sup>42</sup> For example see: Maclean *et al.* (2009).

be subject to project level HRA, as appropriate (though note uncertainty with regards to MCZs mentioned above).

The displacement of fishing is likely to occur in the parts of Round 3 zones which are developed (though these are not necessarily the result of the plan policies), the area identified in the policy map for TIDE1 following any deployment of devices which may occur in this area, and to a minor extent, around CCS or gas platforms within statutory 500m safety zones or any safety zones applied for in relation to subsea facilities. In view of the MCZ fishermap data<sup>43</sup> (for vessels under 15m in length, with information obtained by interview and presented on agreement of interviewees) and Vessel Monitoring System (VMS) data<sup>44</sup> for the marine plan areas, fishing effort appears to be largely concentrated in the inshore area (also see Figures 24 and 25 in the East marine plans document, though note data limitations) where a combination of mobile and fixed gears are utilised, as well as in the north of the region on the Dogger Bank and within The Wash, with effort within Round 3 zones and the area covered by policy TIDE1 being low to moderate (though the high proportion of shellfish landings maintains a relatively high value fishery in the plan areas). There is a degree of uncertainty in the fisheries data<sup>45</sup>, as well as in the likely extent of wind farm and tidal deployment that will occur in the plan areas (directly as a result of the plans), however, the potential for cumulative effects to arise from industrial activity cannot be ruled out. In juxtaposition to the potential policy outcomes discussed above, FISH1 and FISH2 seek to address the balance that displacement may cause by including a consideration of possible fishing displacement and impacts on spawning and nursery grounds (some of which will relate to commercially important species) from activities – it is noted that in establishing an evidence base for the plan that the MMO has sought to understand more clearly important areas for fishing in the east inshore and offshore areas, which should assist in decision making with regards to these policies<sup>46</sup>, however more work is required in this area<sup>47</sup>. The justification/explanation text connected with policy FISH2 states that impacts on spawning and nursery grounds (see Appendix D for the location of these areas) and related habitat are better made at the project level (i.e. through EIA) due to better data currency and resolution at this stage.

Policy ECO2 (on the increased risk of pollution from collision risk) is complemented by PS1, PS2 and PS3 by considering applications for fixed infrastructure (surface or subsea) in the context of maintaining safe navigation, port access and potential future port and harbour expansion. As stated above, shipping is generally already considered at the project level (e.g. as part of consent to locate for activities such as CCS and oil and gas platforms, including mobile rigs, and in siting offshore wind farms) and is covered by International (e.g. COLREGS<sup>48</sup>), Merchant Shipping Regulations<sup>49</sup> and a range of Marine Guidance Notes<sup>50</sup>

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<sup>43</sup> See: <http://planningportal.marinemangement.org.uk/>

<sup>44</sup> For the period 2005-2007 for UK registered vessels greater than 15m in length. Note this data does not include non-UK vessels.

<sup>45</sup> Uncertainties and gaps still exist for fisheries data, as indicated in paragraphs 404-405

<sup>46</sup> For instance data collected by MCZ projects on fishing and recreational activity (e.g. Fishermap and Stakmap studies).

<sup>47</sup> An MMO Fisheries Evidence Programme has been commissioned as part of the MMO Strategic Evidence Plan. The first step has been a review of present information on fishing activity and fishery resource in English waters, see: MMO (2012). Evaluating the distribution, trends and value of inshore and offshore fisheries in England. Cefas for MMO. MMO Project No: 1011, 760pp. Also see: Cefas project on the distribution and intensity of inshore fishing activities and to understand the likely displacement of activities including wind farms and offshore SACs (project no: MB0117) – due to report in 2014.

<sup>48</sup> International Regulations for the Prevention of Collisions at Sea 1972 (as amended).

<sup>49</sup> Merchant Shipping (Distress Signals and Prevention of Collisions) Regulations 1996.

<sup>50</sup> See: <http://www.dft.gov.uk/mca/mcga07-home/mcga-mgn>



produced by the Maritime and Coastguard Agency (MCA) and Notices to Mariners<sup>51</sup> maintained by the UK Hydrographic Office (UKHO), and other methods such as through Kingfisher charts (e.g. in relation to subsea hazards and fisheries). Policy FISH1 reaffirms and complements existing charting arrangements for new developments with regards to fishing, by placing a requirement on applicants to demonstrate in proposals that activities will not prevent access to fishing grounds, or else to provide mitigation. Such a policy, including any mitigation proposed by an applicant, may help to improve understanding of the potential for fishing to be displaced at the project level, though it requires a firm understanding of the level of fishing activity (and its variability over time) in the marine plan areas (see above point in relation to the marine plan evidence base).

AQ1 seeks to protect, “sustainable aquaculture development”. Sustainable aquaculture development sites are not well defined in the East marine plans, though the policy context notes that research will be undertaken in this area (paragraph 428, also see Objective 11), and that aquaculture developers should use the outcome of such research to help locate suitable sites. Figure 27 displays “optimum aquaculture sites” in the marine plan areas “based on current knowledge”. The mapped areas are modelled output resulting from an MMO research report which may be used to inform site specific investigation of possible sites<sup>52</sup>. Similarly, policy AQ1 states that those developers proposing unrelated activity should use the outcome of such research to avoid compromising future aquaculture development, notwithstanding other policies in the plans (e.g. BIO1, BIO2 and GOV2) which should assist in environmental protection and activity co-location.

While many of the policies in the plans reassert existing policy and environmental protection provisions and/or put them in the context of the plan area, the implementation and monitoring proposals for the plans and related SEP have the potential to positively contribute to the understanding the environmental baseline and therefore improve its consideration in applications and consenting decisions. It is uncertain as to the possible effects that activity displacement (particularly of fishing) could generate. However policies dealing specifically with fishing displacement and wider displacement issues could help in assessing these impacts at the project level. The implementation of policies relating to biodiversity protection (e.g. BIO1) and an enhanced consideration of cumulative effects (ECO1), in combination with existing environmental protection measures and other targets which are forthcoming, should help to provide for a high level of protection for marine ecology. Subject to mitigation and outside of any development considered to be IROPI<sup>53</sup>, it is not regarded that the policies provide for additional decision making which could lead to irreversible changes.

### 4.6.3 Mitigation/Recommendations

Following the earlier iterations of this SA, mitigation and plan development, remaining recommendations which have not been incorporated in the East marine plans are listed below.

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<sup>51</sup> See: <http://www.ukho.gov.uk/nmwebsearch/>

<sup>52</sup> MMO (2013). Spatial trends in aquaculture potential in the South and East inshore and offshore marine plan areas. Marine Planning Consultants Ltd. for the Marine Management Organisation, December 2013. MMO Project No: 1040, 202pp.

<sup>53</sup> It is noted in paragraph 15 of the draft marine plans document that the plans can add value to the context of IROPI considerations, and in relation to part d) of hierarchical policies (paragraph 100), i.e., “the case for proceeding with the proposal if it is not possible to minimise or mitigate the impacts”.

| Policy | Recommendation for mitigation/enhancement  | Outcome for East marine plans  |
|--------|--|--|
| AQ1    | The policy is framed in relation to aquaculture sites; an alternative approach which could be explicitly covered in the policy is the augmentation of natural stocks through the rearing and release of juveniles e.g. lobsters.                                   | Recommendation not incorporated into the East marine plans.  |
| FISH1  | While FISH2 may have associated benefits for seabed habitats, FISH1 could more explicitly tackle the possible environmental issue of displacement to different receiving environments rather than just the socio-economic issue of movement from existing grounds. | Recommendation not adopted, though partly covered through other objective level policies (e.g. GOV2 and GOV3). |

#### 4.6.4 Relevant post-consultation changes to the Marine Plans and Sustainability Appraisal

##### Box X: Post-Consultation Appraisal: Marine Ecology

Changes made to the marine plans subsequent to the draft plan consultation (July-October 2013) have relatively minor implications for Marine Ecology. As such, the differences between the appraisal findings presented above and those presented in the draft SA Report (July 2013) are minor. The recommendations presented above are the same as those made within the draft SA Report, i.e. they remain outstanding. The following provides a summary consideration of relevant changes to the marine plans for this appraisal topic.

##### General changes to plan policies, objectives, and related justification/policy context wording

A number of plan policies of relevance to this topic involve a staged approach to considering their potential effects (e.g. see GOV3, WIND1, TIDE1, CCS1, PS2, PS3, DD1, AGG3, CAB1, AQ1) which broadly set out that proposals should demonstrate how they would a) avoid, b) minimise or mitigate, or c) set out a case for proceeding where residual effects remain<sup>54</sup>. In response to consultation feedback on the marine plans, stage b (minimise or mitigate) has been split to initially minimise and then mitigate, introducing a new stage to the policy consideration (see revised AQ1 discussion below).

As both minimisation and mitigation of effects was a consideration of the draft policies, there are few individual policy implications with regards to the change on this SA topic. If the policies are used hierarchically as suggested, then it should encourage the adoption of measures to minimise impact prior to proceeding with mitigation, and that these should be demonstrated to the relevant authority.

##### Relevant Changes to specific plan policies, objectives, and related justification/policy context wording (emphasis reflects major changes)

**BIO1:** Appropriate weight should be attached to biodiversity, **reflecting the need to protect biodiversity as a whole**, taking account of the best available evidence including on habitats and species that are protected or of conservation concern in the East marine plans and adjacent areas (marine, terrestrial).

*BIO1 previously focussed on sites and species of conservation interest which are protected through statutory mechanisms (e.g. European Sites), with wider biodiversity considerations being left to the*

<sup>54</sup> Note that the MMO have clarified in the revised Marine Plans that those submissions under part d) of these policies, "...is to provide information for consideration by the relevant public authorities. It does not indicate that approval of a proposal will follow by default. In determining proposals the public authority/ies will take account of a range of relevant considerations including compliance with legislation and regulations and EIA where already required." It is also stated in paragraph 100 that part d) could apply, for instance, in the case of IROPI in relation to nationally significant infrastructure. Sustainability Appraisal of the East Inshore and East Offshore draft Marine Plans—Sustainability Appraisal Report

*policy justification/explanation text. Following consultee feedback, and to broaden the policy wording such that it is more consistent with the MPS (MPS paragraph 2.6.1.1) and MSFD requirements, the policy now considers “biodiversity as a whole” and refers to a figure of predicted seabed habitats. While this brings broadscale biodiversity considerations into the policy wording, as discussed in previous iterations of the sustainability appraisal report, the inclusion of the requirement to attach “appropriate weight” to biodiversity interests (and supporting habitats) is in keeping with other national level policy (e.g. the NPPF, MPS), however it is uncertain how this definition would be applied (e.g. in relation to existing legislative requirements).*

**AQ1: Within sustainable aquaculture development sites** (identified through research), proposals should demonstrate in order of preference:

- a) that they will avoid adverse impacts on future aquaculture development by altering the sea bed or water column in ways which would cause adverse impacts to aquaculture productivity or potential;
- b) how, if there are adverse impacts on aquaculture development, they can be minimised
- c) how, if the adverse impacts cannot be minimised they will be mitigated;
- d) the case for proceeding with the proposal if it is not possible to minimise or mitigate the adverse impacts.

*AQ1 formerly referred to “optimum sites for aquaculture development”, which was highlighted in the SA as not being well defined in the draft marine plans. The marine plans now make reference to Figure 27, Optimum sites of aquaculture potential, which gives the policy a spatial expression which it did not have in the draft plan document and further indicates that, “These are the areas which policy AQ1 applies” (paragraph 429). The map in Figure 27 is based on modelling output from a research report commissioned by the MMO to investigate the potential for aquaculture development in the East and South Marine Plan Areas<sup>55</sup>. It should be noted that the report on which this is based indicates that the modelled output is, “...a baseline to inform site specific investigation and to refine through further iterations of the model as new datasets are added to it.”, for instance, some of the input datasets such as sediments are themselves predicted. Despite the map representing “best available evidence”, it is regarded that the text should be more explicit about which data the map is based. Additionally, other marine plan policies such as BIO1 and underlying existing legislative provisions should complement AQ1 such that proposals avoid adverse impacts on the seabed or water column.*

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<sup>55</sup> MMO (2013). Spatial trends in aquaculture potential in the South and East inshore and offshore marine plan areas. Marine Planning Consultants Ltd. for the Marine Management Organisation, December 2013. MMO Project No: 1040, 202pp.

## 4.8 Economy

### 4.8.1 Appraisal Table

**Table 4-7: Summary of SA Findings for the Economy - East marine plans January 2014**

|                                   |  |        |  |          |
|-----------------------------------|--|--------|--|----------|
| Relevant Marine Plan Objectives   | <b>Objectives:</b> 1, 2, 3, 4  |        |  |          |
| Relevant Marine Plan Policy Areas | Section 3.1: Economic<br>Section 3.2: Social and Cultural<br>Section 3.5 Governance<br>Section 3.7: Oil and Gas<br>Section 3.8: Offshore Renewable Wind Energy<br>Section 3.10: Carbon Capture and Storage   |        | Section 3.11: Ports and Shipping<br>Section 3.12: Dredging and Disposal<br>Section 3.13: Aggregates<br>Section 3.15: Fisheries<br>Section 3.17: Tourism and Recreation |          |
| Relevant Marine Plan Policies     | <b>Policies which augment or provide new policy definition</b>   |        | <b>Policies which reaffirm existing policy/planning mechanisms</b>   |          |
|                                   | SOC1   | TR1-3  | EC1-3  | SOC1     |
|                                   | SOC 2, 3   | CCS1-2 | SOC 3  | SOC 2, 3 |
|                                   | GOV1-3   | PS1-3  | WIND 1   | GOV1-3   |
|                                   | WIND 2   |        |  | WIND 2   |
|                                   | AGG3   |        | AGG1-2   | AGG3     |
|                                   | FISH1-2  |        | OG1-2  | FISH1-2  |
| Potentially Sensitive Receptors   | <p>There is a need to focus on the potential for impacts to local economies / opportunities to realise economic benefits locally given understanding of existing issues / objectives.</p> <p>The SA should focus on this whilst acknowledging the potential for the East marine plans to realise economic benefits more generally (e.g. for businesses with less of a geographic focus).</p> |        |  |          |

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Current and future baseline conditions in absence of Marine Plan

Current

- Local economies within parts of Hull, Northeast Lincolnshire and Waveney Districts can be placed in the category of being 'structurally shifting' by which we mean that these areas are facing the challenge to find new industries and markets. These areas are characterised by a low proportion of people with degree level qualifications and a high proportion of people involved in manufacturing, construction and transport storage. Jobs growth has been lower on average in these areas than across coastal areas and England as a whole over recent years.
  - The UK is developing a position as leaders in the field of offshore wind development. At the more local level, there are identified opportunities for developing the industry, particularly in the Humber Estuary and also Great Yarmouth / Lowestoft areas.
  - Aggregate extracted from the East plan areas is crucial to the local and national economy, accounting for 80% of the supply of construction aggregate in London. The sector is not a significant employer, although some ports do deal with significant quantities of aggregates.
  - The UK is considered to have an internationally significant potential to develop CCS. However, there is still uncertainty regarding CCS given the need for major investment in 'supporting infrastructure' (both onshore and offshore).
  - In 2010, shipping industry made a £6.1 billion value-added contribution to UK GDP and accounts for a very large proportion of imported goods. Ensuring access to and ports is essential to maintain competitiveness for all industry reliant on shipping for import to and export from their activity. The Humber ports are of particular strategic importance.
  - The total number of individuals employed in fisheries has fallen in past decades, making this activity one of lesser economic significance in many local areas. However, fisheries activity is still important in some labour markets, particularly those which are more peripheral, and lack alternative occupations.
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Future

- Without the East marine plans, there is an expectation that offshore wind farms (OWFs) will come forward in 'Round 3' (R3) zones at a relatively fast rate (i.e. close to the maximum rate at which developers can deliver), and hence there is an expectation that economic benefits will be realised in time. However, there could be instances where OWF development is hindered by the need to accommodate competing interests.
- Marine sourced aggregates are expected to increase in importance over coming years, at the expense of land won supplies. Without the East marine plans, OWF development has the potential to 'sterilise' aggregates resources that exist within the Hornsea and East Anglia R3 zones.
- Significant opportunities for CCS exist in the East plan areas due to the number of decommissioned hydrocarbon fields, and it is fair to assume that economic benefits could also be captured locally. Without the East marine plans, OWF development in R3 zones has the potential to 'sterilise' three saline aquifers and four disused hydrocarbon fields.
- Ship based transport is expected to continue to increase (primarily as a result of the introduction of the tonnage tax in 2000) and is expected to remain the principle means for UK goods transportation. The size of vessels is likely to increase resulting in a need for capital dredging at ports and harbours to increase the depth of navigation channels. Without the East marine plans, there is the potential for conflict with offshore windfarms, although it is recognised that measures would be agreed to mitigate problems.
- Current trends in relation to the decline of the UK fishing industry may continue into the future, although there is the likelihood of government intervention (unrelated to the Marine Plan) focused on maintaining fishing activities. Without the East marine plans OWF development in R3 zones has the potential to displace fishing given that some types of fishing are unable to co-locate with wind. Displacement is most serious when considering smaller vessels, which will often not be able to change their fishing areas. The implication is that, without the marine plan, there could be pressure on small fishing businesses which, in turn, may be spatially focused along the coastline.

|   | <b>Within plans review period (to 2019)</b>   | <b>Within currency of plans (to 2033)</b> | <b>Beyond currency of plans (&gt;2033)</b> |  |
|---|---|---|--|--|
| Likely changes in baseline conditions as a result of East marine plans adoption | <b>+</b>  | <b>+</b>                                  | <b>+</b>                                   | The East marine plans are expected to lead to positive effects in the short, medium and long term, although there is a high degree of uncertainty as to the scale of benefits at the regional scale. At the more local scale, we can be more confident that the East marine plans will result in targeted economic activity that will help to bring about employment focused regeneration within particular communities where there are currently identified problems. It is not anticipated that any particular economic activities / local economies will suffer as a result of the plans. |
| <i>Reversibility of change</i>  | <b>R</b>  | <b>R</b>                                  | <b>R</b>                                   |  |
| <i>Certainty</i>  | <b>L</b>  | <b>L</b>                                  | <b>L</b>                                   |  |
| Cumulative Impacts Consideration  | The future success of local economies along the coastline of the East Plan area will to a large extent be dependent on factors unrelated to marine planning. For example, there are well understood problems of economic peripherality and low education and skills attainment that, if addressed, will enable growth. There is a good chance that the East marine plans will contribute to improved 'joined-up thinking' at sub-regional scales – in particular around the Humber – that will lead to other initiatives coming forward. This positive cumulative effect could well be significant. |   |  |  |

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|               |   |
|---------------|---|
| Uncertainties | The location and timing of many marine activities is not known. Therefore it is difficult to ascertain in which local economies the effects from marine activities will be most evident with the effect of realising key opportunities / addressing barriers to growth. Also, it is not possible to be certain regarding the approach that will be taken by commercial operators towards investment in skills, towards recruitment strategy and procurement and use of sub-contractors. This will be significant in determining the extent to which economic activity in the short terms leads to sustainable economic growth in the long term. |
|---------------|---|

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## 4.8.2 Discussion

It is anticipated that the East marine plans will enable growth across sectors at levels beyond those likely in the absence of the East marine plans by:

- Increasing certainty in what sort of developments are likely to gain consent and where, making potential developments more attractive to investors
- Reducing transaction costs incurred by businesses that may arise in the absence of the clarity afforded by the East marine plans
- Signposting to help ensure that developments mitigate negative impacts on each other thus avoiding the administrative and frictional costs that arise from conflict between sectors
- Signposting the need to consider activities which fall outside of existing licensing or management measures (e.g. some marine recreation activities) by highlighting the importance of co-location and the issue of displacement, contributing to the growth of these smaller sectors alongside the larger industries
- The inclusion of policies signposting fledgling sectors/technologies and encouraging consideration by other sectors of areas which might be needed for these fledgling sectors/technologies in the future (e.g. CCS and Wave Energy)

From a SA perspective, considering economic effects on particular geographical areas / local economies or sectors of the population is important. In particular, there is a need to consider the rate and nature of economic growth that can be expected in areas along the coastline where there are well understood strategic/structural economic challenges and/or opportunities. As the bullets above aren't derived from localised evidence specific to the East plan areas it is not possible to use them to attribute significant impact on the economy baseline in this SA Report, despite there being a clear likelihood of them impacting upon the baseline.

In terms of sector specific impacts, the plan is particularly supportive of energy development, particularly offshore wind, through policy EC3 and policies WIND1 and 2. Providing certainty for offshore wind investment could help offshore wind growth at the regional scale. Offshore wind growth should result in economic benefits that will likely be captured locally along the coastline to a significant extent. The plans do not single out particular areas for associated onshore developments, but do highlight a range of other initiatives that may support economic growth in localities bordering the plan areas.

Though it cannot be attributed primarily to the plans, the growth in the offshore wind energy sector is likely to benefit the Humber Estuary and Great Yarmouth / Lowestoft areas. Per capita 'productivity' in these areas can be expected to rise significantly given that the renewables industry will be the beneficiary of very high levels of capital investment over coming years. Also, assuming that maintenance and operations activities choose to locate nearby (and this is not certain given the footloose nature of these industries), then the effect should also be to create a



good range of employment including opportunities for those with lower skill levels. The supportive wind policies of the plans could encourage employment growth and other economic benefits over and above that predicted under a 'no plan' scenario baseline, though this is not certain.

Having identified the potential for the East marine plans to encourage increased economic activity associated with the wind energy sector (and associated benefits in terms of labour utilisation and productivity), it is important to consider other sectors that may be affected by this additional activity. It is possible that this additional activity may cause further competition for space which could in turn impact activity associated with other sectors, most notably shipping and ports. Port activity is of particular importance from an 'economic' perspective given that labour catchments tend to be relatively local, and there is demand for lower skilled labour, so creating jobs that are accessible for workers who find themselves at increased risk of unemployment. Ports are also important from a perspective of generating 'agglomeration effects' (i.e. bringing together businesses and encouraging cooperation) and driving improvements to local infrastructure. The Ports and Shipping policies (PS1-3) anticipate and try to mitigate any negative impacts. This would not happen without the plans. Furthermore, increased offshore wind development could mean more activity for local ports. Overall, it is assumed for the purposes of this appraisal that possible contraction in port activities in key areas related to decreased shipping will be nullified by positive effects related to the expansion in offshore wind energy related activities centred on ports.

Oil and gas activity, whilst expected to decline over the life of the plans, is still an important economic contributor and is currently the largest sector in terms of GVA generated. The plans support further oil and gas exploration and production, with associated economic benefits. In terms of oil and gas, however, it is important to note that there can be less certainty in terms of 'where' the benefits of economic growth will be felt.

The East marine plans are expected to lead to positive effects in the short, medium and long term, although there is a degree of uncertainty. This uncertainty relates to the fact that other drivers of economic activity are significant and wide ranging. The East marine plans should support targeted economic activity that will help to bring about employment focused regeneration within particular communities where there are currently identified problems. It is not anticipated that, on balance, any particular economic activities or local economies will suffer as a result of the plans.

Further discussion of the anticipated benefits of marine planning can be found in the 'Analysis of the East Inshore and East Offshore marine plans'<sup>56</sup>.

### 4.8.3 Mitigation/Recommendations

Following the earlier iterations of SA, mitigation and plan development, there are no further recommendations to be made at this stage.

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<sup>56</sup> MMO (2014) Analysis of the East Inshore and East Offshore Marine Plans



## 4.8.4 Relevant post-consultation changes to the Marine Plans and Sustainability Appraisal

### Post-Consultation Appraisal: Economy

Changes made to the marine plans subsequent to the draft plan consultation (July-October 2013) have relatively minor implications for the economy. As such, the differences between the appraisal findings presented above and those presented in the draft SA Report (July 2013) are minor. No recommendations were made as part of the July 2013 appraisal, and it remains the case that no recommendations are made. The following provides a summary consideration of relevant changes to the marine plans for this appraisal topic.

#### General changes to plan policies, objectives, and related justification/policy context wording

A number of plan policies of relevance to this topic (e.g. see GOV3 and PS3 in particular) now require a clear staged approach to the consideration of effects. Broadly, the policies establish that proposals should demonstrate how they would a) avoid, b) minimise or mitigate, or c) set out a case for proceeding where residual effects remain. In response to consultation feedback on the marine plans, stage b (minimise or mitigate) has been split to initially minimise and then mitigate, introducing a new stage to the policy consideration. If the policies are used hierarchically as suggested, then it should encourage the adoption of measures to minimise impacts prior to proceeding with mitigation. This approach is supported from an 'economy' perspective.

#### Relevant Changes to specific plan policies, objectives, and related justification/policy context wording (emphasis reflects major changes)

**EC1:** Proposals that provide **economic productivity benefits** which are additional to Gross Value Added currently generated by existing activities should be supported.

*The policy previously referred to 'sustainable' economic productivity benefits. Given that the supporting text includes in-depth discussion around what is meant by 'sustainable' economic productivity benefits, the merits of removing the word 'sustainable' are not clear. The supporting text explains that sustainable economic productivity benefits will be those that reflect social and economic considerations, as well as economic considerations. The supporting text cautions against a narrow application of GVA as a metric. The supporting text identifies that "local authorities and LEPs will highlight the aspirations and needs of different areas, including highlighting where there may be economic development objectives relating to marine activities."*

## 4.9 Geology, Geomorphology and Coastal Processes

### 4.9.1 Appraisal Table

**Table 4-8 Appraisal Summary Table for Geology, Geomorphology and Coastal Processes –East marine plans January 2014**

|  |  |  |
|--|--|--|
| Relevant Marine Plan Objectives              | <b>Objectives:</b> 6, 7, 8, 9, 10, 11  |  |
| Relevant Marine Plan Policy Areas by Section | 3.1: Economic Policies<br>3.3: Environment<br>3.4: Climate Change<br>3.5: Governance<br>3.7 Oil and Gas<br>3.8: Offshore renewable wind energy | 3.10: Carbon Capture and Storage<br>3.12: Dredging and Disposal<br>3.13: Aggregates<br>3.14: Subsea Cabling<br>3.15: Fisheries |

3.9: Tidal stream and wave

| Relevant Marine Plan Policies  | Policies which augment or provide new policy definition  |   | Policies which reaffirm existing policy/planning mechanisms |     |
|--|--|---|---|-----|
| (See Appendix I)   | BIO2   | TIDE1   | EC3   | DD1 |
|  | MPA1   | WIND2   | ECO1, 2   |     |
|  | CC1, 2   | FISH1, 2  | BIO1  |     |
|  | GOV1, 2, 3   |   | OG1, 2  |     |
|  | AGG2, 3  |   | WIND1   |     |
|  | CCS1, 2  |   | AGG1  |     |
|  | CAB1   |   |   |     |
| Potentially Sensitive Receptors/Receptor Groups                        | <ul style="list-style-type: none"> <li>▪ Marine ecology through habitat loss due to cabling, pipelay, dredging and trawling.</li> <li>▪ Marine ecology through sediment contamination.</li> <li>▪ Temporary effects on marine ecology from turbidity and sediment plumes resulting from dredging, trawling and activities associated with placement of infrastructure on the seabed.</li> <li>▪ Physical processes at the coast impacted by defence structures, inappropriate development and other coastal encroachment and resulting community-scale effects and habitat degradation or loss.</li> <li>▪ Cultural Heritage resources through disturbance and direct removal of material (dealt with separately in Section 4.5).</li> </ul> |   |   |     |
| Current and future baseline conditions in absence of East marine plans | Current  | <ul style="list-style-type: none"> <li>▪ Currently no human activities cause significant regional scale geological changes, though trawling, dredging (navigational and mineral), offshore wind turbine foundations and the installation of other fixed infrastructure (e.g. pipelines and cables) generate localised scour and temporary sediment plumes which have the potential to degrade habitats and affect associated flora and fauna if not managed appropriately.</li> <li>▪ In some areas there is a legacy of historic sediment contamination (particularly in estuarine and coastal regions), and continued inputs of contaminants may be derived from riverine inputs, coastal industry and shipping.</li> </ul> |   |     |

Future

- The MCAA 2009<sup>57</sup> provides a new means for conserving ‘features of geological and geomorphological interest’ as MCZs which will augment protection provided by existing coastal earth science SSSIs and GCR sites. A number of MCZs have now been proposed in the east marine plan inshore and offshore areas and are presently out to consultation (see Appendix D for more details).
- Both the WFD and the MSFD seek to improve the physical (including hydrographic) and therefore ecological/environmental status of water bodies and seafloor integrity. Actions, including existing legislative provisions and policy will assist in meeting targets set to achieve GES.
- Anthropogenic impacts are unlikely to be significant enough in the future to cause regional scale geological changes, and impacts including localised scour and sediment plumes associated with today’s activities are likely to continue into the future.
- At the coast, sea level rise has the potential to exacerbate erosion and flooding. In some areas (see Appendix F), no active intervention is planned, while a combination of soft (e.g. beach recharge) and hard (e.g. groynes) may be used at other locations, where appropriate, to help avoid the loss of essential infrastructure.

| Likely changes in baseline conditions as a result of East marine plans adoption | Within plans review period (to 2019) | Within currency of plans (to 2033) | Beyond currency of plans (>2033) | Policy provisions in the East marine plans document largely confirm or reinforce existing policy measures, though in some circumstances provide for safeguards or considerations (by decisions makers and applicants) which could assist in protecting geological or geomorphological interests, or those which are relevant to particular activities (e.g. CCS).<br><br>Though it is not regarded that the East marine plans augment existing policy or development control mechanisms to such a degree that they will generate a significantly different outcome for geology, substrates or coastal processes during the life of the plan, they will assist in implementing provisions of the MPS and may also contribute to better interactions between terrestrial and marine decision makers for developments which may have an intertidal/coastal impact. (e.g. GOV1)<br><br>Certain policies (e.g. WIND1, AGG3) have the potential to enhance industry confidence in these areas <b>Error! Bookmark not defined.</b> and may result in a faster or greater quantity of development in these sectors, though there is a moderate level of uncertainty in this assertion. |
|---|--------------------------------------|------------------------------------|----------------------------------|--|
| <i>Significance of change</i>   | 0                                    | +                                  | +                                |  |
| <i>Reversibility of change</i>  | N/A                                  | R                                  | R/IR                             |  |
| <i>Certainty</i>  | H                                    | M                                  | L                                |  |

Cumulative Impacts Consideration Cumulative effects are a consideration of the East marine plans through policy ECO1, both in decision making and in the implementation of the East marine plans. Moreover, cumulative effects are highlighted as a key area of study in the MMO Strategic Evidence Plan and any evidence that emerges from related studies will inform the plans (see Objective 11 and related text of the East marine plans document).

There is the potential for cumulative effects to arise for this SA topic by the expansion of certain marine licensable activities, for instance areas covered under policy TIDE1, but which may also be subject to aggregate extraction through policy AGG3, and later AGG1-2. As these policies

<sup>57</sup> HM Government (2009) Marine and Coastal Access Act 2009.

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augment existing provisions, there could be said to be cumulative effects potentially arising from the adoption of the plan. Though policies EC3 and WIND 1-2 promote wind in the marine plan areas, offshore wind is already of strategic importance here, and Round 3 developers are either undertaking zone appraisal (e.g. ZAP, for instance Hornsea Project One), or else are in the initial stages of individual project planning. Though wind could lead to cumulative effects with regards to physical disturbance offshore and in relation to any ancillary/associated development in the offshore and inshore areas, and at the coast, (e.g. as considered in DECC 2011) it cannot be regarded with any certainty (outside of the plans support for a consideration of cumulative effects), that the plan will either abate or exacerbate such effects. As a result, cumulative effects should be an important consideration for project level assessment, and in any future plans or programmes subject to SEA (e.g. further offshore renewables leasing).

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#### Uncertainties

With the exception of certain activities (and those covered by marine plan policies which may be spatially represented, e.g. in policy maps), the potential location and timing of many future developments is not known, and there will still be a reliance on project-level assessment to consider the implications of any given development on this topic. Analogous to this uncertainty is the location of features which may be of conservation interest and/or features that may in time be subject to MCZ/SSSI designations and related management plans, in part connected to the incomplete survey coverage of the UKCS. These uncertainties are likely to be reduced in fulfilment of Objective 11 of the East marine plans, the commitments made in the plan to evidence gathering and plan review (see Objective 11 and related text of the East marine plans), other ongoing initiatives (e.g. the civil hydrography programme) and development led discoveries.

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## 4.9.2 Discussion

Policies and related context/justification contained in the East marine plans provide the basis for both considering the protection of geological and geomorphological features (e.g. in the context of statutory designations) through decision making and by augmenting existing terrestrial protection measures afforded by such designations such as earth science SSSIs and Geological Conservation Review (GCR) sites. BIO1 is largely a reaffirmation of existing policy (e.g. is largely drawn from strategic level policy in the MPS) or outlines statutory requirements (e.g. in relation to Natura 2000 sites) in its policy justification. The policy also states that, “Appropriate weight should be attached to biodiversity, reflecting the need to protect biodiversity as a whole...”, and policy justification text includes that when applying BIO1, consideration should be given to wider biodiversity interests, such as broadscale habitats...”. The inclusion of the requirement to attach “appropriate weight” to biodiversity interests (and supporting habitats) is in keeping with other national level policy (e.g. the NPPF) and consistent with the MPS. It is uncertain how this definition complements existing legislative requirements, for instance in relation to statutory sites, or indeed wider biodiversity. MPA1 introduces new policy wording to consider activities which could impact on the delivery of an ecologically coherent network of MPAs (incorporating Natura 2000 sites and MCZs). The policy complements existing requirements and may assist in achieving commitments related to the completion of an ecologically coherent and well-managed network of Marine Protected Areas<sup>58</sup>. It is understood that isolation of the policy to strategic level assessment allows for the consideration of how the adoption of a plan (e.g. future wind leasing, oil and gas licensing) may impact the MPA network as a whole including a consideration of cumulative effects and interactions with other plans and programmes. This is, however, restrictive with regards to some activities, for instance no programme of SEA is undertaken for aggregates licensing (though see Section 4.6 and below

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<sup>58</sup> As suggested as a contributory measure to achieving good environmental status in the MSFD, and as required in [similar commitments regarding MPAs under international conventions such as the Convention on Biological Diversity](#). Sustainability Appraisal of the East Inshore and East Offshore draft Marine Plans—Sustainability Appraisal Report

for a consideration of the implications of policies AGG1-3). In this instance and any others where an effect on site integrity may arise, these would need to be considered at the project level, as indicated in paragraph 201 of the marine plans.

Policies CC1 and AGG1-3 provide the basis for decision making authorities to ensure that proposals<sup>59</sup> consider the potential effects of climate change on their integrity, and how they may impact upon adaptation measures, as well as providing (in combination with the NPPF) that a suitable level of aggregates are available, including for beach recharge projects where this is a suitable defence or adaptation measure (e.g. SMP coastal cells identified as having a Hold the Line policy – see Appendix F). Policy CC1 formalises considerations in the MPS (Section 2.6.7) and reflects terrestrial provisions of the NPPF<sup>60</sup>, and is most likely to be implemented when considering nearshore and coastal structures which have the potential to alter sediment dynamics, or be subject to issues arising from sea-level change. It is noted that the policy context signposts existing measures related to coastal change management (e.g. the Flood and Coastal Erosion Risk Management (FCERM) Strategy, SMPs – also see Appendix F) and indicates that any applicant should review these and contact the EA and relevant Local Authorities (as relevant lead organisations/authorities with flood and coastal erosion risk management roles<sup>61</sup>). The policy wording of CC1 is framed in the context of climate change adaptation rather than being a wider consideration of coastal change and flood risk as connected though separate issues. Inappropriate development in the nearshore may alter sediment dynamics which, for instance, could result in an alteration of beach sediment balance in isolation from the effects of climate change (as recognised in the MPS, paragraph 2.6.8.4). It is not clear where the East marine plans provide additional policy to help provide additional safeguards to coastal processes and change in addition to that already presented in the MPS.

The MMOs SEP lists a “Climate change adaptation” programme of research which has the aim “to inform potential adaptation initiatives and to help ensure the sustainability of policies included in the developing East marine plans.” Evidence gathering through the SEP, those key areas outlined in paragraph 80 of the East marine plans document, and other ongoing research (e.g. the fifth IPCC assessment report/any subsequent UKCP update), will assist in developing future plans and in consenting decisions in combination with those other initiatives and policies related to coastal management, in addition to meeting the MMOs statutory functions in relation to the Climate Change Act 2008<sup>62</sup>.

A number of activity specific policies of relevance to this topic, for instance those associated with oil and gas (OG1, OG2), offshore wind (WIND1) and aggregates (AGG1, AGG2), largely reflect existing policy or consenting mechanisms, and therefore it is not regarded that these policies would result in an appreciably different outcome with regards to activity siting and resultant impacts on the environment from not adopting the plans. A study<sup>63</sup> undertaken for the marine plan areas suggests a possible increase in offshore wind and aggregates to result from plan adoption, though does not provide a quantitative prediction, nor is it spatially specific. In

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<sup>59</sup> Defined in the marine plans as, “...usually something new but could also be for a change that encompasses development and uses subject to management by public authorities, e.g. fishing or certain recreation, together with management measures. Proposals may relate to either type of decision specified in the MCAA, i.e. “authorisation or enforcement decisions”, or any other kind of decision which, “relate to the exercise of any function capable of affecting the UK marine area”

<sup>60</sup> National Planning Policy Framework (2012), paragraph 100.

<sup>61</sup> See: Statutory guidance on the implementation of the Flood and Water Management Act 2010 Sections 13(1) and 14 in England, the Flood and Water Management Act 2010 and related Orders relevant to England

<sup>62</sup> In connection with the Climate Change Act 2008. The MMO is an adaptation reporting authority under the Climate Change Act, Part 4.

<sup>63</sup> MMO (2014). [Analysis of the East Inshore and East Offshore Marine Plans](#)

this instance a greater degree of physical disturbance to the seabed may arise, however this needs to be considered in the context of existing factors affecting industry confidence including the level of government subsidy, successful HRA challenges to construction in certain Round 3 zones, and at least in the short term, any supply chain considerations. Moreover, existing consenting assessments at the plan (e.g. offshore wind and tidal energy) and project level, in combination with other commitments (e.g. under the MSFD) should assure that the implications of enhanced deployment are adequately assessed and effects mitigated or avoided, and the East marine plans should contribute to or reaffirm policies which offset potential negative effects through the implementation of, amongst others, BIO1, BIO2, MPA1 and GOV2.

With regards to safeguarding geological structures suitable for CO<sub>2</sub> storage, the plan contains a policy that requires applicants to consider the location of potential storage structures, including active and depleted gas fields (policy CCS1 and related policy map in Figure 17), to prevent sterilisation of such areas for future use. In combination with a requirement to consider the potential for re-use of gas infrastructure for CCS at the decommissioning stage of offshore facilities (see CCS2<sup>64</sup>), the result could be a smaller seabed footprint and related physical disturbance issues from CCS activities compared with the installation of new facilities, but only where the timing of re-use and uptake of CCS appropriately coincide, and facilities (including pipelines) and the geology of depleted fields are suitable for such re-use. Like other policies for which spatial data is provided, CCS1 may be subject to change resulting from additional evidence on potential storage sites. With regards to potential effects on geology and substrates, physical disturbance of the seabed and at landfall resulting from new infrastructure will be analogous to that for oil and gas activities (see DECC 2011), for which there is substantial permitting experience in the east marine plan areas. The physical effects of such activity at the coast will be captured by other plan policies such as CC1 and BIO1 with regards to coastal processes and resilience to climate change, and any impact on geological conservation interests or habitats respectively.

Analogous to policy CCS1, AGG3 seeks to safeguard potential aggregate resources (those defined in policy map AGG3, Figure 21) from developments which could prevent future extraction of material. This safeguarding involves applicants having to both demonstrate that no viable sand and gravel resources are present or that they will not preclude future extraction, as well as whether the site of a development at decommissioning holds aggregate resource. The plans indicate that there is some uncertainty in the data underlying the policy map (paragraph 380), and Round 3 zones have been excluded from the policy map as per the adoption of a combination of plan Option B and Option C (see Section 3.2). The resource area is significantly larger than what is likely to be required to meet demand<sup>65</sup> (estimated to be less than 5% in the marine plan areas), and given that wind (the activity with the largest potential fixed future footprint) is excluded from the spatial expression of the policy, it is not regarded that the policy outcome will be appreciably different for this topic compared with the no-plan option, though some additional extraction may be expected.

Other policies for which there may be an interaction with AGG3 include those for oil and gas, and tidal energy. The area of potential aggregate resource overlaps with the largest area of potential tidal stream resource identified in policy map TIDE1. While aggregates extraction is unlikely to sterilise this area for tidal technology, the reverse is likely to be true for the life of any tidal project. Securing tidal development through safeguarding the potential tidal resource (under TIDE1) would present the applicant and decision maker with a range of considerations

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<sup>64</sup> Note that the presumption of re-use of oil and gas infrastructure by the relevant licensing in other energy projects, or any other relevant project (e.g. CCS), already takes place, consistent with OSPAR Decision 98/3.

<sup>65</sup> For instance as stated in DCLG (2009). National and regional guidelines for aggregates provision in England 2005-2020.



relevant to this SA topic. Safeguarding of the tidal resource area from fixed infrastructure would mean the seabed would effectively be protected from activities such as cabling, pipeline routing and fixed installations (e.g. oil and gas/CCS related or out of round wind farms). Though physical impacts from these activities are spatially and temporally discrete, transient activities that could still take place in the area of tidal resource are likely to include fishing and aggregate extraction, which have a greater impact on seabed character and quality. However, unless activities are displaced to this area as a result of the adoption of the plans, it cannot be determined with any confidence that the policy outcome will be significantly different in the area covered by TIDE1 for this SA topic. At the project level, tidal developments have the potential to both contribute to climate change and energy policies, and in the long-term assist in renewables deployment and in realising a diverse and low carbon energy mix. Therefore the policy reflects national scale aspirations<sup>66</sup> and legally binding commitments<sup>67</sup> with regards to energy and climate change. Indirectly, but only as part of a larger deployment of renewables, this policy could assist in abating the worst effects of climate change and related coastal issues associated with sea-level rise<sup>68</sup>. It should also be noted that at the array scale, tidal energy may influence coastal dynamics through energy removal<sup>69</sup>, and this should be a consideration of decision makers (see Recommendations below) as it has implications for other policies including CC1.

The policy map associated with AGG3 includes areas in close proximity to (and which apparently abut) the coast. The potential for aggregate extraction to make alterations to the wave environment or result in sediment drawdown due to localised deepening has been noted<sup>70</sup>, and any application for a licence to extract aggregates within the potential resource area should be assessed as part of a Coastal Impact Assessment<sup>71</sup>, as is current practice, and is noted as such in the East marine plans (paragraph 340). Moreover, such applications should be considered in relation to existing statutory and non-statutory plans such as SMPs, relevant Flood Risk Management Strategies, the location of Coastal Change Management Areas and the reasons for their selection. Considering the plans document as a whole, this should be covered under Objective 10 of the East marine plans.

DD1 safeguards existing dredging and disposal areas to maintain port access from the imposition of other fixed infrastructure. This would be subject to project level permitting, and as dredging activities will be within 1nm of the coast, covered by WFD requirements. The plans recognise this in the policy context. It is recommended that the EA publication, *Clearing the Water*<sup>72</sup> is signposted, which is intended to frame dredging and disposal activities in the context of WFD to ensure compliance.

It is stated in the East marine plans document that the plans will, "...make a contribution to implementing the MSFD alongside a range of other measures", though it is noted that the nature of this contribution will become clear as measures for achieving Good Environmental Status (GES) and the East marine plans develop (East marine plans paragraph 154). It is stated in the first MSFD marine strategy document<sup>36</sup> that as marine plans develop, "...policies...will take into

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<sup>66</sup> DECC (2011). *The Carbon Plan: Delivering our low carbon future*

<sup>67</sup> e.g. at the National level under the Climate Change Act 2008, and related 2009 Order

<sup>68</sup> Though changes in other climatic variables such as storminess and wave conditions have been postulated, confidence in projected changes is less than for sea-level change (see Appendix F).

<sup>69</sup> DECC (2011). *UK Offshore Energy Strategic Environmental Assessment 2*. Department of Energy and Climate Change.

<sup>70</sup> Tillin HM *et al.* (2011). *Direct and Indirect Impacts of Aggregate Dredging*. Marine ALSF Science Monograph Series No. 1. MEPF 10/P144. (Edited by R. C. Newell & J. Measures). 41pp.

<sup>71</sup> See BMAPA & The Crown Estate (2013). *Marine aggregate dredging and the coastline: a guidance note*, 52pp.

<sup>72</sup> Environment Agency, *Clearing the Water* guidance: <http://www.environment-agency.gov.uk/research/planning/40191.aspx>

account GES targets and indicators once established. Monitoring arrangements for marine plans will use the monitoring programme being put in place for GES as far as possible”. This document also sets targets and indicators for the achievement of GES, which includes a consideration of seafloor integrity. A number of the MSFD descriptors for GES are relevant to this SA topic, particularly descriptors 6, 7 and 8, which relate to seafloor integrity, hydrographic conditions and marine pollution respectively, and a number of policies relating to the protection of biodiversity, including of MPAs by considering any impacts on the delivery of an “ecologically coherent network of sites”, have the potential to contribute to the achievement of these targets.

It may be concluded that the East marine plans could make a minor positive contribution to baseline conditions compared to the no plan option. There is, however, a general lack of consideration of coastal change and flooding, and how proposals (e.g. aggregates, tidal energy) could impact these. Though Objective 10 highlights the requirement of the plans to consider other plans (and therefore provides some integration with existing coastal planning) – a separate policy explicitly acknowledging that nearshore developments should consider coastal erosion and flooding, and how this will integrate with land based plans and decision making would be useful. Such a policy could also highlight particularly sensitive areas of coast (e.g. as suggested in the MPS<sup>73</sup>, Section 2.6.8.5), which in combination with climate change resilience and adaptation (CC1) may provide for more robust consideration of coastal issues (see Recommendations below, and Appendix F). It is recognised that the consideration of such plans is made in the East marine plans through signposting at the policy level (e.g. CC1, GOV policies).

Subject to mitigation and outside of any development considered to be IROPI74, it is not regarded that the policies provide for decision making which could lead to irreversible changes. It is not regarded that, on their own, plan policies will generate transboundary effects in relation to this topic.

### 4.9.3 Mitigation/Recommendations

Following the earlier iterations of SA, mitigation and plan development, remaining recommendations which have not been incorporated in the East marine plans are listed below.

| Policy                       | Recommendation for mitigation/enhancement   | Outcome for East marine plans                               |
|------------------------------|---|---|
| CC1, all AGG policies, TIDE1 | Though the EA may have responsibility for the management of coastal erosion and flood risk, marine licensable activities have the potential to affect coastal processes which could exacerbate flood and coastal erosion risk in the absence of climate change impacts, and this policy, or one dedicated to coastal processes could highlight this. It is acknowledged in the MPS that climate change may exacerbate erosion and flooding issues, and that the planning authority should consider areas where development should be avoided (e.g. areas identified as Coastal Change Management Areas, or areas of coast which would be particularly sensitive to development). A policy map reflecting areas identified as being particularly sensitive, connected with other relevant plans such as SMP coastal cell policies, may | Recommendation not incorporated into the East marine plans. |

<sup>73</sup> HM Government (2011) UK Marine Policy Statement

<sup>74</sup> It is noted in paragraph 15 of the draft marine plans document that the plans can add value to the context of IROPI considerations, and in relation to part d) of hierarchical policies (paragraph 100), i.e., “the case for proceeding with the proposal if it is not possible to minimise or mitigate the impacts”.



assist decision makers in considering erosion and flood risk. The map indicating non-statutory plans could be expanded to show the type of management approach to coastal cells in the east inshore marine plan area (e.g. hold the line, managed retreat etc.). Though this may repeat information contained in SMPs, it would provide useful additional policy context.

|       |   |  |
|-------|---|--|
| TIDE1 | The policy is focussed on tidal deployment. Reference to the potential for nearshore activities to alter or exacerbate existing coastal change and flood risk issues could be made in the policy context, or else through reference to a separate policy on this issue (see above). | Recommendation not incorporated into the East marine plans, though is partly covered under the policy context for CC1, and more generally in the MPS (paragraph 2.6.8) |
|-------|---|--|

#### 4.9.4 Relevant post-consultation changes to the Marine Plans and Sustainability Appraisal

##### Post-Consultation Appraisal: Geology, Geomorphology and Coastal Processes

Changes made to the marine plans subsequent to the draft plan consultation (July-October 2013) have relatively minor implications for Geology, Geomorphology and Coastal Processes. As such, the differences between the appraisal findings presented above and those presented in the draft SA Report (July 2013) are minor. The recommendations presented above are the same as those made within the draft SA Report, i.e. they remain outstanding. The following provides a summary consideration of relevant changes to the marine plans for this appraisal topic.

##### General changes to plan policies, objectives, and related justification/policy context wording

A number of plan policies of relevance to this topic involve a staged approach to considering their potential effects (e.g. see GOV3, WIND1, TIDE1, CCS1, PS2, PS3, DD1, AGG3, CAB1) which broadly set out that proposals should demonstrate how they would a) avoid, b) minimise or mitigate, or c) set out a case for proceeding where residual effects remain<sup>75</sup>. In response to consultation feedback on the marine plans, stage b (minimise or mitigate) has been split to initially minimise and then mitigate, introducing a new stage to the policy consideration.

As both minimisation and mitigation of effects was a consideration of the draft policies, there are few individual policy implications with regards to the change on this SA topic. If the policies are used hierarchically as suggested, then it should encourage the adoption of measures to minimise impact prior to proceeding with mitigation, and that these should be demonstrated to the relevant authority.

##### Relevant Changes to specific plan policies, objectives, and related justification/policy context wording (emphasis reflects major changes)

**BIO1:** Appropriate weight should be attached to biodiversity, **reflecting the need to protect biodiversity as a whole**, taking account of the best available evidence including on habitats and species that are protected or of conservation concern in the East marine plans and adjacent areas (marine, terrestrial).

*BIO1 previously focussed on sites and species of conservation interest which are protected through*

<sup>75</sup> Note that the MMO have clarified in the revised Marine Plans that those submissions under part d) of these policies, "...is to provide information for consideration by the relevant public authorities. It does not indicate that approval of a proposal will follow by default. In determining proposals the public authority/ies will take account of a range of relevant considerations including compliance with legislation and regulations and EIA where already required." It is also stated in paragraph 100 that part d) could apply, for instance, in the case of IROPI in relation to nationally significant infrastructure.

statutory mechanisms (e.g. European Sites), with wider biodiversity considerations being left to the policy justification/explanation text. Following consultee feedback, and to broaden the policy wording such that it is more consistent with the MPS (MPS paragraph 2.6.1.1) and MSFD requirements, the policy now considers “biodiversity as a whole” and refers to a figure of predicted seabed habitats. While this brings broadscale biodiversity (and underlying habitats which rely on the integrity of the seabed) considerations into the policy wording, as discussed in previous iterations of the sustainability appraisal report, the inclusion of the requirement to attach “appropriate weight” to biodiversity interests (and supporting habitats) is in keeping with other national level policy (e.g. the NPPF, MPS), however it is uncertain how this definition would be applied (e.g. in relation to existing legislative requirements).

## 4.10 Landscape and Seascape

### 4.10.1 Appraisal Table

**Table 4-9 Appraisal Summary Table for Landscape and Seascape –East marine plans January 2014**

|   |   |        |  |       |
|---|---|--------|--|-------|
| Relevant Marine Plan Objectives                 | <b>Objectives:</b> 5, 10, 11  |        |  |       |
| Relevant Marine Plan Policy Areas by Section    | 3.1: Economic   |        | 3.10: Carbon Capture and Storage                                   |       |
|   | 3.2: Social   |        | 3.13: Aggregates   |       |
|   | 3.5: Governance   |        | 3.16: Aquaculture  |       |
|   | 3.7: Oil & gas  |        | 3.17: Tourism and Recreation                                       |       |
|   | 3.8: Offshore renewable wind energy   |        |  |       |
|   | 3.9: Tidal stream and wave  |        |  |       |
| Relevant Marine Plan Policies                   | <b>Policies which augment or provide new policy definition</b>  |        | <b>Policies which reaffirm existing policy/planning mechanisms</b> |       |
| (See Appendix I)                                | SOC1, 2, 3  | TIDE1  | EC3  | OG1,2 |
|   | GOV1, 2, 3  | AQ1    | WIND1  |       |
|   | CCS1, 2   | TR1, 3 |  |       |
|   | WIND2   |        |  |       |
| Potentially Sensitive Receptors/Receptor Groups | <ul style="list-style-type: none"> <li>People living in (or visiting) an area of the coast (e.g. through existing coastal access or that provided under Marine and Coastal Access Act provisions in the coming years) or at sea (e.g. when yachting, fishing, aboard a passenger ferry in the inshore or offshore plan areas). Influences for change may be where a proposed offshore wind farm, tidal device or other fixed infrastructure is visible from coastal viewpoints or boating routes, for the lifetime of any given project, and in combination with other coastal and offshore activities or surface developments.</li> <li>The setting, and therefore perception of, designated landscapes (e.g. Broads National Park, Suffolk Coast and Heaths AONB, Suffolk heritage coast – see Appendix G), non-designated landscapes and cultural/heritage assets (see Section 4.5) for which there are particular cultural associations.</li> </ul> |        |  |       |

|  |         |   |
|--|---------|---|
| Current and future baseline conditions in absence of East marine plans | Current | <ul style="list-style-type: none"> <li>▪ The coastal landscape is protected in certain areas through existing mechanisms (e.g. AONB, Heritage Coast designations). In keeping with the European Landscape Convention and existing policy wording (e.g. as in the MPS, Section 2.6.5), all landscapes should be considered in relation to new development.</li> <li>▪ A number of operational offshore wind farms are present in the inshore area (e.g. Inner Dowsing, Lynn, Scroby Sands).</li> <li>▪ The present seascape is influenced by a diverse array of fixed and transient activities (e.g. shipping, aggregate extraction, gas field infrastructure and activities), some of which may have strong cultural associations (see Appendix G for a consideration of baseline character).</li> </ul>  |
|  | Future  | <ul style="list-style-type: none"> <li>▪ The number of offshore gas facilities is likely to decline as hydrocarbon reserves deplete, but some could be subject to re-use for CCS or else new installations constructed, though these are unlikely to be visible from the coast.</li> <li>▪ The number of OWFs is predicted to increase as projects for Round 2 (and any related extensions) are completed and those for Round 3 commence (though the latter are largely outside of territorial waters and with reduced visibility from the coast).</li> <li>▪ Tidal devices may be deployed in the east inshore marine plan area in the coming years (note that the tidal stream resource is spatially restricted – see discussion below).</li> <li>▪ Shipping is projected to increase, and there are likely to be changes to port capacity/facilities associated with OWF development.</li> <li>▪ Landfall for new CCS pipelines and OWF/tidal device cables will have associated onshore facilities.</li> <li>▪ The implementation of a national coastal trail and related coastal access is ongoing.</li> </ul> |

| Likely changes in baseline conditions as a result of East marine plans adoption | Within plans review period (to 2019) | Within currency of plans (to 2033) | Beyond currency of plans (>2033) | The East marine plans reinforce existing policy and, for instance, reaffirm the UK Government's commitment to the development of renewable energy, and policies relating to seascape and the setting of heritage assets. It is not regarded that the East marine plans augment existing policy or development control mechanisms to such a degree that they will generate a significantly different outcome for seascape during the life of the plans. Any enhancement of industry confidence in offshore renewable energy resulting from the East marine plans may result in a more rapid rollout of offshore renewables. The majority of such developments are likely to be beyond a distance of 12nm from the coast and therefore will not result in seascape (as defined in the MPS) effects. |
|---|--------------------------------------|------------------------------------|----------------------------------|---|
| <i>Significance of change</i>   | <b>0</b>                             | <b>0</b>                           | <b>0</b>                         |   |
| <i>Reversibility of change</i>  | <b>NA</b>                            | <b>NA</b>                          | <b>NA</b>                        |   |
| <i>Certainty</i>  | <b>H</b>                             | <b>M</b>                           | <b>L</b>                         |   |

|                                  |   |
|----------------------------------|---|
| Cumulative effects consideration | Though marine plan policies promote offshore wind (e.g. EC3, WIND1-2, subject to applications fulfilling other assessment and permitting requirements, and also considering the plan as a whole), it is not expected that landscape/seascape effects will be appreciably different if the plans were not adopted with regards to such effects (e.g.as Round 3 continues |
|----------------------------------|---|

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to develop). Cumulative effects of wind deployment are likely to be experienced by offshore users (e.g. recreational yachting), though ancillary development at the coast may result in cumulative effects if combined with multiple landfall operations for wind, tidal and CCS developments.

As the tidal resources in the marine plan areas will be safeguarded (TIDE1), there is a greater degree of certainty that deployment could take place there, though the timing and scale of such development is uncertain. Such structures are necessarily nearshore and therefore will have associated visual impacts, which in combination with other marine licensable activities such as cable and pipeline landfall, and other visual changes such as the predicted growth in the shipping sector and related ports, has the potential to result in cumulative effects. Tidal and wind resources do not overlap, largely negating future offshore cumulative effects of deployment of both technologies.

The seascape character assessment produced by the MMO (see SOC3), based on a Natural England pilot study, has the potential to assist in the consideration of possible cumulative visual effects of individual developments. Recommendations which relate to the MMO character assessment are made below.

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#### Uncertainties

With the exception of certain activities (for instance those covered by plan policies which may be spatially represented in policy maps), the location and timing of many developments is not known, and there is a lack of spatial specificity in many plan policies. There will still be a reliance on project-level assessment (and existing methods and guidance – see Appendix G) to consider the implications of any given development on seascape.

An analysis<sup>76</sup> of the plan suggests the potential for additional offshore wind and aggregates to result from adoption of the marine plan through increased confidence in these sectors. Uncertainty is attached to these projections due to a range of other, potentially more influential factors including but not limited to the level of government subsidy, successful HRA challenges to construction in certain Round 3 zones, and at least in the short term, any supply chain considerations, which may affect net wind farm deployment.

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## 4.10.2 Discussion

The East marine plans recognise those industries which are due to expand in the coming years within the east marine plan areas (e.g. offshore wind, tidal energy and CCS). The policy screening (see Section 4.2, Appendix I) reflects those plan policies which have a connection with seascape (i.e. the expansion or continuation of a particular activity is likely to influence the character of seascape in the lifetime of the plans) and whether these present new or existing policy. Relatively few of the policies regarded to have a connection with seascape provide new policy wording or definition beyond that which already exists at a national level (for instance EC3, WIND1, SOC2 reflect existing development trajectory or requirements), and it is not considered likely that the adoption of these policies on their own, or in combination would appreciably change the distribution (e.g. in form and location) of activities to a degree that the trajectory of change in the baseline will be significantly altered. There is the potential for enhancement of industry confidence in marine renewable energy resulting from policies such as WIND1 and TIDE1, though this needs to be considered in the context of existing factors affecting confidence including the level of government subsidy, successful HRA challenges to

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<sup>76</sup> MMO (2014) Analysis of the East Inshore and East Offshore Marine Plans

construction in certain Round 3 zones, and at least in the short term, any supply chain considerations<sup>77</sup>.

As part of the plan process, the MMO developed a character assessment of the East Marine Plan areas. The work is largely descriptive and does not consider the relative sensitivity of any particular area to differing types of potential development, though it complements existing and ongoing work in identifying and updating the terrestrial Natural England National Character Areas (NCAs)<sup>78</sup>. The character specific policy (SOC3) and the related policy map (Figure 4) may help towards the identification of character areas and their consideration in the statutory decision making process<sup>79</sup> (see Data Gaps in Appendix G). Project level assessment would need to build on this work in order to assess and optimise development design and layout (e.g. in keeping with NPS EN-3 paragraph 2.6.202, see below).

The East marine plans use the MPS definition of seascape, "...landscapes with views of the coast or seas, and coasts and the adjacent marine environment with cultural, historical and archaeological links with each other.", however, the seascape context (paragraph 133) also makes reference to the definition of landscape from the European Landscape Convention (ELC).

The context to policy SOC3 recognises the role of perception in the definition of seascape character. There is a difference in scope between the definition of seascape used in the MPS and the character areas studied by Natural England (2012)<sup>80</sup> and used in the seascape policy map (Figure 4 in the East marine plans). For instance it is noted that SOC3 requires, proposals, "...that may affect the terrestrial and marine character of an area ...", to demonstrate that they will not impact on character, or how impacts would be minimised, mitigated, or the case for proceeding if impacts are unavoidable, while Figure 4 contains limited "...landscapes with views of the coast or seas.". This difference in scope could potentially create uncertainty as to how an applicant or decision maker is to consider those offshore character areas which fall outside of the MPS seascape definition, and how this definition is to be applied (for instance, will this depend on the intervisibility defined using project level SVIA, as is undertaken for offshore wind – see NPS EN-3)<sup>81</sup>. There also appears to be inconsistency about what is described as shown in Figure 4, for instance it is noted in paragraph 145 that the character areas have been, "...determined by their own individual character derived from both visual and non-visual elements...", but that those character areas in Figure 4 do, "...not relate to the visual element of seascape..." (paragraph 151). Given the context of present guidance on seascape assessment, it is not clear how "non-visual" elements of seascape are to be considered or impacts on these assessed.

The plans signpost to existing policy and measures in relation to landscape and seascape, including highlighting the need to have regard to nationally-designated areas, such as National Parks and Areas of Outstanding Natural Beauty. The character policy and its related justification/explanation also allows for a consideration of seascape character outside of highly

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<sup>77</sup> See BVG (2012). Towards Round 3: the offshore wind supply chain in 2012. An analysis for The Crown Estate of the constraints affecting the delivery of UK offshore wind, 8pp.

<sup>78</sup> The new NCA profiles update the previously published Joint Character Area (JCAs) and Countryside Character Area descriptions (1998-1999). <http://www.naturalengland.org.uk/publications/nca/default.aspx>

<sup>79</sup> See: Europarc Atlantic Isles (2010). Coastal protected landscapes and marine planning system. A report from a workshop held at Losehill Hall, May 2010.

<sup>80</sup> See Natural England (2012) An approach to Seascape Character Assessment, and Figure 4 of the East marine plans document.

<sup>81</sup> Note that SVIA is signposted as a tool in the plans (paragraph 142).

designated sites, and is therefore in keeping with the principles laid out in the ELC (i.e. that all landscapes matter). In relation to terrestrial developments and those within the remit of the Planning Act 2008, related policy documents (e.g. NPPF, EN-1-6) present the view that the highest protection status should be afforded to statutory landscape designations (such as AONBs and National Parks under the Countryside and Rights of Way Act 2000 and Environment Act 1995 respectively<sup>82</sup>; note Heritage Coasts are non-statutory – see Appendix G), within which proposed developments may be exceptionally granted consent where it is demonstrated to be in the public interest. As all public authorities, “...must take any authorisation or enforcement decisions in accordance with the appropriate marine policy documents<sup>83</sup>, unless relevant considerations indicate otherwise.”<sup>84</sup>, there is the potential for the East marine plans to provide a more detailed consideration of seascape and character issues at the development level<sup>85</sup>.

The signposting section for policy SOC3 refers to paragraphs 5.9.12 and 5.9.13 of NPS EN-1. These paragraphs relate to energy developments outside nationally designated areas though which might affect them, and state that, “The aim should be to avoid compromising the purposes of designation and such projects should be designed sensitively given the various siting, operational, and other relevant constraints” and, “The fact that a proposed project will be visible from within a designated area should not in itself be a reason for refusing consent.” With regards to offshore wind, which is likely to substantially expand in the marine plan areas in the coming years, signposting for seascape (see East marine plans paragraph 141) refers to the seascape and visual amenity policy of NPS EN-3, i.e. that consent for a development will not be refused entirely on the grounds of adverse impacts on visual amenity unless an alternative development layout be proposed which would minimise any harm while taking account of other constraints (e.g. ecological effects), or the harmful effects are considered to outweigh the benefits of the proposed scheme<sup>86</sup>. Most future offshore wind developments are likely to be of a size that they will fall within the remit of NPS EN-1 and EN-3. The augmentation of these by policy SOC3 may benefit the general consideration of seascape character outside of designated sites.

A number of policies have the potential to positively influence the consideration of seascape in decision-making (directly or indirectly) by formalising certain non-statutory arrangements. For instance reinforcing the considerations made by Natural England’s Coastal Access Scheme<sup>87</sup> with regards to new coastal development and access (SOC1, also in the policy justification/explanation for TR3 – see paragraph 461), should help to maintain the access duty, and properly managed “enhancement” as suggested in SOC1, could encourage the number of people visiting and utilising space encompassing seascape views. Additionally, policy justification/explanation wording related to WIND2 indicates that the support provided by regulatory authorities referred to in the WIND2 policy is contingent upon the use of Zone Appraisal Planning (ZAP), or equivalent zone level assessment, for wind development zones. ZAP, undertaken prior to any application, provides the opportunity for a high level consideration

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<sup>82</sup> See Natural England (2010) statutory landscape designations: a practical guide to your duty of regard. 29pp.

<sup>83</sup> Which includes any marine plan which has been adopted, though see Section 1.8 on relevance of plan to decision making prior to adoption.

<sup>84</sup> Marine and Coastal Access (2009), Sections 58 and 59. Also see Sections 1.2.2 and 4.1.6 of the Overarching National Policy Statement for Energy (EN-1).

<sup>85</sup> In this context, in line with the Marine and Coastal Access Act 2009 (S.58) “authorisation or enforcement decisions” relate to “the determination of any application (whenever made) for authorisation of the doing of any act which affects or might affect the whole or any part of the UK marine area”

<sup>86</sup> See NPS EN-3, paragraph 2.6.208 and EN-1, paragraphs 5.9.18-5.9.23.

<sup>87</sup> Natural England (2010). Coastal Access: Natural England’s Approved Scheme. Presented to Parliament pursuant to section 298(6) of the Marine and Coastal Access Act 2009, 186pp. Work has commenced on three stretches of coast in the east inshore marine plan area, with work on an additional stretch due to commence in 2012/2013 – see Appendix G.

Sustainability Appraisal of the East Inshore and East Offshore draft Marine Plans—Sustainability Appraisal Report



of issues and stakeholder engagement, including on the scale of development and seascape issues. Though ZAP is underway or complete for the Round 3 zones in the east marine plan areas, this policy will encourage the use of such appraisal in future leasing Rounds, or any possible out of Round applications.

Offshore wind developments viewable from the coast will require Seascape and Visual Impact Assessment (SVIA) as part of the EIA process if they present possible seascape issues. The policy text associated with TR1 makes the inherent connection between visual amenity and the tourism offer (paragraph 445), that, “This policy will be implemented by the public authorities responsible for authorising such developments. This could mean consideration of... seascape; please refer to the seascape section (character and visual resource) for more information”. An equivalent piece of text relating seascape to tourism under policy SOC3 further helps in highlighting this link.

The character assessment undertaken for the MMO is not technology specific, nor does it reflect any plan-level futures (e.g. see data gaps in Appendix G). It is not regarded that the study can be used to help inform potential cumulative effects of plan adoption at this stage (see key issues in Appendix G) and the level of detail presently provided by the characterisation is not sufficient for an improved protection of seascapes (see recommendations below), i.e. that it can help the marine plan authority to, “...take into account existing character and quality, how highly it is valued and its capacity to accommodate change specific to any development.” (MPS Section 2.6.5.3)<sup>88</sup>. It is noted that the marine plans recognise that it is the role of “the regulatory authority” to take into account the MPS text. Also see data gaps identified for Landscape and Seascape in Appendix G).

No policies commit the MMO to support or commission further research in this area, though Objective 11 of the East marine plans and the Strategic Evidence Plan (SEP) have the potential to improve the evidence base and are in keeping with the High Level Marine Objectives. Moreover, plan review and monitoring should allow for updates to the character descriptions (and consideration of other new evidence) which will enable an assessment of changes to the character of plan areas, and the relative success of the seascape policy (also see Recommendations below).

Subject to mitigation and outside of any development considered to be IROPI<sup>89</sup>, it is not regarded that the policies provide for decision making which could lead to irreversible changes. It is not regarded that, on their own, plan policies will generate transboundary effects in relation to this topic.

### 4.10.3 Mitigation/Recommendations

Following the earlier iterations of SA, mitigation and plan development, remaining recommendations which have not been incorporated in the East marine plans are listed below.

| Policy | Recommendation for mitigation/enhancement  | Outcome for East marine plans  |
|--------|--|--|
| SOC3   | Connected with the recommendation below. It is not considered that the characterisation related to this policy in its present form provides sufficient detail as a basis for | Recommendation not incorporated into the East marine plans. See section 5.3 for the SA monitoring framework. |

<sup>88</sup> HM Government (2011) UK Marine Policy Statement

<sup>89</sup> It is noted in paragraph 15 of the marine plans document that the plans can add value to the context of IROPI considerations, and in relation to part d) of hierarchical policies (paragraph 100), i.e., “the case for proceeding with the proposal if it is not possible to minimise or mitigate the impacts”.



| Policy | Recommendation for mitigation/enhancement  | Outcome for East marine plans   |
|--------|--|---|
|        | assessment, though in time could be used for monitoring using an approach similar to the Countryside Quality Counts project <sup>90</sup> .  |   |
|        | The policy and its related justification need to make clear what is expected from an applicant with regards to the consideration of seascape character areas in the context of the definition of seascape used in the MPS and adopted by the East marine plans (i.e. how are marine character areas with views which are not coastal views to be considered, if at all, and how are “non-visual” aspects of seascape to be considered?). | It remains uncertain how consideration of offshore character areas should be made in proposals, though consultation with the relevant authorities in early project planning should provide further clarity. |
| -      | Though not considered a necessary change to policy wording, the enhancement of the characterisation study through the commissioning of further study, would be useful both in assisting developer assessment and consenting decisions. In the absence of this, signposting to other relevant initiatives, assessment methods and guidance (see Appendix G) to consider at the development level could be made.                           | No further signposting has been incorporated into the East marine plans.  |

#### 4.10.4 Relevant post-consultation changes to the Marine Plans and Sustainability Appraisal

##### Post-Consultation Appraisal: Landscape and Seascape

Changes made to the marine plans subsequent to the draft plan consultation (July-October 2013) have relatively minor implications for Landscape and Seascape. As such, the differences between the appraisal findings presented above and those presented in the draft SA Report (July 2013) are minor. The recommendations presented above are the same as those made within the draft SA Report, i.e. they remain outstanding. The following provides a summary consideration of relevant changes to the marine plans for this appraisal topic.

##### General changes to plan policies, objectives, and related justification/policy context wording

A number of plan policies of relevance to this topic involve a staged approach to considering their potential effects (e.g. see GOV3, WIND1, TIDE1) which broadly set out that proposals should demonstrate how they would a) avoid, b) minimise or mitigate, or c) set out a case for proceeding where residual effects remain<sup>91</sup>. In response to consultation feedback on the marine plans, stage b (minimise or mitigate) has been split to initially minimise and then mitigate, introducing a new stage to the policy consideration.

As both minimisation and mitigation of effects was a consideration of the draft policies, there are few individual policy implications with regards to the change on this SA topic. If the policies are used hierarchically as suggested, then it should encourage the adoption of measures to minimise impact prior to proceeding with mitigation, and that these should be demonstrated to the relevant authority.

<sup>90</sup> <http://www.naturalengland.org.uk/ourwork/landscape/englands/character/cqc/default.aspx>

<sup>91</sup> Note that the MMO have clarified in the revised East marine plans that those submissions under part d) of these policies, “...is to provide information for consideration by the relevant public authorities. It does not indicate that approval of a proposal will follow by default. In determining proposals the public authority/ies will take account of a range of relevant considerations including compliance with legislation and regulations and EIA where already required.” It is also stated in paragraph 100 that part d) could apply, for instance, in the case of IROPI in relation to nationally significant infrastructure.

**Relevant Changes to specific plan policies, objectives, and related justification/policy context wording (emphasis reflects major changes)**

**SOC3:** Proposals that may affect the terrestrial and marine character of an area should demonstrate, in order of preference:

- a) that they will not adversely impact the terrestrial and marine character of an area;
- b) how, if there are adverse impacts on the terrestrial and marine character of an area, they will minimise them;
- c) how, where these adverse impacts on the terrestrial and marine character of an area cannot be minimised they will be mitigated against;
- d) the case for proceeding with the proposal if it is not possible to minimise or mitigate the adverse impacts.

*The policy has been expanded and strengthened such that developers must demonstrate that they will not adversely impact terrestrial and marine character, or how any impacts will be minimised or mitigated. The iteration of this policy which appeared in the draft plans merely stated that, "Proposals should consider the potential impacts on the terrestrial and marine character of an area, taking into account any proposed mitigation measures." While the wording appears to be more direct in indicating what is to be demonstrated in proposals, it is still not clear how the policy map and character areas relating to this policy fully come within the definition of seascape put forward by the MPS, and how these character areas are to be used in practice (see discussion above).*

**Objective 5:** To conserve heritage assets, **nationally protected landscapes** and ensure that decisions consider the seascape of the local area.

**TR1:** Proposals for development should demonstrate that during construction and operation, in order of preference:

- e) they will not adversely impact tourism and recreation activities
- f) how, if there are adverse impacts on tourism and recreation activities, they will minimise them
- g) how, if the adverse impacts cannot be minimised, they will be mitigated

the case for proceeding with the proposal if it is not possible to minimise or mitigate the adverse impacts.

*The reference to the 'operation' phases is new, and is welcomed from a 'landscape and seascape perspective.*

## 4.11 Water Environment

### 4.11.1 Appraisal Table

**Table 4-10 Appraisal Summary Table for Water Environment – East marine plans January 2014**

|                                   |   |  |
|-----------------------------------|---|--|
| Relevant Marine Plan Objectives   | <b>Objective:</b> 3, 6, 7, 8, 9, 10, 11   |  |
| Relevant Marine Plan Policy Areas | Section 3.1: Economic<br>Section 3.3: Environment<br>Section 3.5: Governance<br>Section 3.10: Carbon Capture and Storage<br>Section 3.7: Oil and Gas<br>Section 3.8: Offshore Renewable Wind Energy | Section 3.9: Tidal Stream and Wave<br>Section 3.14: Subsea Cabling<br>Section 3.13: Aggregates<br>Section 3.12: Dredging and Disposal<br>Section 3.16: Aquaculture |
| Relevant                          | <b>Policies which augment or provide new</b>  | <b>Policies which reaffirm existing</b>  |

| Marine Plan Policies   | policy definition  |   | policy/planning mechanisms                 |   |
|--|--|---|--|---|
|  |  | MPA1  | TIDE1                                      | EC3   |
|  | GOV1, 2  | CAB1  | ECO2                                       | WIND1   |
|  | CCS2   | AGG3  | BIO1                                       | AGG1,2  |
|  | ECO1   | AQ1   | CCS2                                       | DD1   |
|  | WIND2  |   |  |   |
| Potentially Sensitive Receptors/ Receptor Groups                       | <p>Water masses and circulation.</p> <p>Wave environment.</p> <p>Sea-level change and flood risk which could be exacerbated by inappropriate development.</p> <p>Marine pollution/water quality which could be made worse through pollution and disturbance of sediments from marine construction and operation activities.</p> <p>Temperature and salinity.</p> |   |  |   |
| Current and future baseline conditions in absence of Marine Plan       | Current  | <ul style="list-style-type: none"> <li>The key drivers for change are large scale climatic and oceanographic processes. Variations have been observed in North Atlantic and North Sea circulation patterns which are likely to influence sea surface temperatures and wave heights.</li> <li>Sea levels are rising and the coastline continues to be at greater risk of flooding/erosion.</li> <li>The pH of the world's oceans has been declining due to CO<sub>2</sub> uptake from anthropogenic sources.</li> <li>Pollution is decreasing in the marine plan area but there is still a legacy of substances from industrialised areas. Stringent controls exist to ensure marine pollution is reduced.</li> <li>Developments and other activities (e.g. dredging, waste water disposal) at the coast and at sea can have adverse effects on transitional waters, coastal waters and marine waters.</li> </ul>  |  |   |
|  | Future   | <ul style="list-style-type: none"> <li>Around the UK, sea temperatures and seasonal stratification strengths are predicted to increase, while salinity is projected to decrease over the 21<sup>st</sup> century. Acidity is predicted to increase through uptake of CO<sub>2</sub>.</li> <li>For the medium emissions scenario used in UKCP09, little qualitative change in the circulation pattern across the majority of the UK shelf is predicted. A decrease of ≈20% in the flow of water from East Anglia along the continental coast to the German Bight is also predicted. Despite only medium confidence in predictions, MCCIP<sup>92</sup> indicate that it is likely that the Atlantic Meridional Overturning Circulation will weaken this century.</li> <li>The East marine plans would not be able to affect the rate of sea level rise although measures exist to adapt to and reduce the risk of coastal flooding.</li> <li>The growing traffic in heavy fuel oils through the region raises the risk of accidental spillages occurring although international efforts to improve the quality of ships and crews are likely to have the most significant benefit to this. Similarly, the predicted expansion of nuclear power stations in the region may result in further radioactive discharges to the marine environment, although stringent controls are in place to manage this.</li> </ul> |  |   |
| Likely changes in baseline conditions as a result of East marine plans | <b>Within plans review period (to 2019)</b>  | <b>Within currency of plans (to 2033)</b>   | <b>Beyond currency of plans (&gt;2033)</b> | The principal aspects of the water environment which the East marine plans can influence are water quality/marine pollution and coastal flood risk/erosion. The East marine plans largely reinforce existing policy with regard to activities |

<sup>92</sup> MCCIP (2011). Marine Climate Change Impacts Annual Report Card 2010-2011. MCCIP, Lowestoft, Summary Report. Sustainability Appraisal of the East Inshore and East Offshore draft Marine Plans—Sustainability Appraisal Report

|                                  |   |           |           |  |
|----------------------------------|---|-----------|-----------|--|
| adoption                         |   |           |           | and reaffirm the UK Government's commitment to environmental and water quality protection and climate change impacts at the coast.   |
| <i>Significance of change</i>    | <b>0</b>  | <b>0</b>  | <b>0</b>  | Whilst offshore wind development and aggregates extraction may increase slightly as a result of East marine plans adoption new policy (especially ECO2 regrinding reducing the risk of pollution from collisions) would help to mitigate this. Consequently, given that existing controls are in place to encourage marine water quality improvements, a neutral score has been assigned to reflect a similar baseline projection as to the business as usual. |
| <i>Reversibility of change</i>   | <b>NA</b>   | <b>NA</b> | <b>NA</b> |  |
| <i>Certainty</i>                 | <b>L</b>  | <b>L</b>  | <b>L</b>  |  |
| Cumulative Effects Consideration | <p>With regard to the protection of water quality, the East marine plans largely re-affirm existing policy and planning mechanisms. Indeed, there is a significant body of legislation/European Directives and international conventions which seek to improve marine water quality including the MSFD and WFD, OSPAR Convention, MARPOL and others such as the International Regulations for Preventing Collisions at Sea 1972 (COLREGs) (see Annex H). Whilst the East marine plans do not attempt to replicate the details of these documents, it aims to be consistent with them and re-affirms their key messages in principle. As described above, the East marine plans also promote sustainable growth within the marine plan areas. This may give rise to an increase in development of offshore renewables (and associated ancillary development in inshore areas) and aggregates extraction, both of which can lead to at least temporary effects on water quality.</p> <p>However, cumulative effects are a consideration of the East marine plans through policy ECO1, both in decision-making and in the implementation of the East marine plans. Moreover, cumulative effects are highlighted as a key area of study in the MMO Strategic Evidence Plan and any evidence that emerges from related studies will inform the plans (see Objective 11 of the East marine plans document). It is considered that the existing water quality protection provisions in place together with the new policy in the East marine plans (discussed below) would be sufficient to mitigate this. Furthermore, in terms of climate change (with subsequent effects on sea temperatures and acidity), it can be viewed that the East marine plans focus on renewable energy technologies may contribute to the wider cumulative efforts to meet Government targets.</p> <p>Nonetheless, cumulative effects should be an important consideration for project level assessment, and in any future plans or programmes subject to SEA (e.g. further offshore renewables leasing).</p> |           |           |  |
| Uncertainties                    | <p>With the exception of certain activities (and those covered by marine plan policies which may be spatially represented, e.g. in policy maps), the location and timing of many developments is not known, and there will still be a reliance on project-level assessment to consider the implications of any given development on the water environment. Similarly, water quality can be affected by a wide range of sources including terrestrial sources and hence it can be difficult to determine the exact origins of pollution. Also, it is not certain that the East marine plans will definitely result in a greater degree of offshore wind and aggregates extraction compared with the no plan option.</p>  |           |           |  |

## 4.11.2 Discussion

The key drivers for change in the water environment are large scale climatic and ocean processes. At present there are no local human activities within the marine plan areas that are likely to significantly change the physical properties of the water environment although it is recognised that acidity levels and carbon dioxide uptake is increasing as a result of global human activity. The main area of influence of the East marine plans is, therefore, in terms of

marine pollution/water quality and coastal flood risk. The East marine plans contain policies which both provide protection to the water environment and also promote activities which may result in harm to water quality. Some of the policies re-affirm existing policy and practice such as, for example, those relating to the on-going role of the oil and gas industry, offshore wind and aggregates extraction. Some complement existing policy such as those which seek to avoid sterilisation of tidal power potential and fishing grounds and protection of aquaculture resources.

Of those which promote or favour new activities, OG1 and 2 seek to presume in favour of oil and gas development subject to the applicant mitigating negative impacts to the satisfaction of the public authorities. Similarly, EC3 gives support to offshore wind expansion, WIND1 protects sites under lease from the Crown Estate for wind energy development and AGG2 seeks to protect aggregates sites subject to abstraction licenses. Each of these activities has potential to result in marine pollution. However, there already exist a number of mechanisms and drivers for controlling this such as MSFD and WFD, OSPAR Convention, MARPOL and others. Beyond this, these policies largely re-affirm existing policy/planning mechanisms such as, for example, the plans actively recognise the role of EIA in developments which should ensure that impacts on water quality are appropriately assessed in those cases. There are also a number of policies in the plans which seek to protect the water environment and are discussed further below.

Some policies which promote activities also seek to complement existing policy. TIDE1 seeks to ensure that future tidal power developments would not be compromised by intervening activities. CAB1 reflects the requirements of the MPS and promotes the burying of cables in the seabed. AGG1 and 3 seek to protect aggregates extraction areas or ensure against future sterilisation of resources. AQ1 makes similar provisions with regard to shellfish waters. Each of these activities has potential to result in adverse effects on water quality either as a result of pollution or sediment mobilisation, temporarily during construction or as a result of aggregates extraction activity. Shellfisheries can also lead to localised pollution through leaks and spillages and an increase in nutrients in the water column. Some of these activities are likely to require EIAs which should help to avoid adverse effects on water quality, notably tidal power schemes and aquaculture projects. Similarly, it is expected that appropriate construction, environmental management and sensitive operational environmental management practices and controls would be in place as part of the consent agreement.

The East marine plans contain a number of policies which either directly or indirectly offer protection to water quality. Principally ECO2 requires applicants to address the risks of pollution as a result of collision. Again, these policies are identified as re-affirming existing policy. BIO1 and ECO1 seek for development to avoid harm to biodiversity interests including, specifically, designated sites and associated areas beyond their boundaries. This is largely a reaffirmation of existing policy (e.g. is largely drawn from strategic level policy in the MPS) or outlines statutory requirements (e.g. in relation to Natura 2000 sites). This policy is likely to afford some protection to water quality in those areas as it is likely to be directly linked to the sites' conservation objectives. Similarly, ECO1 seeks to ensure that cumulative impacts in ecosystems are also taken account of in decision-making processes. DD1 reiterates that for consents for navigational dredging, relevant guidance and procedures should be followed and the approach should be justified. This should include consideration of the protection of water quality.

One specific policy is included which relates directly to the protection of water quality. ECO2 requires applicants to address the risks of pollution as a result of collision. Again, this is identified as re-affirming existing policy and provisions, notably MARPOL, the Shipboard Oil

Pollution Emergency Plans (SOPEP)<sup>93</sup> and COLREGs. Policy provisions regarding the protection of water quality in earlier drafts have now been signposted in the supporting text.

It is stated in the East marine plans that they will, “...*make a contribution to implementing the MSFD alongside a range of other measures*”, although it is noted that the nature of this contribution will become clear as measures for achieving GES and the marine plans develop. It is stated elsewhere that,

“In the meantime, the East Inshore and East Offshore marine plans can highlight the requirements and any known implications of MSFD for the Marine Plan areas through the objectives and plan policies and through subsequent implementation and monitoring.” A number of the MSFD descriptors for GES are relevant to this SA topic, particularly descriptor 8, which relates to marine pollution. The UK Marine Strategy Part One indicates that for descriptor 8, the existing licensing and consenting process, marine planning and also WFD requirements should largely cover the requirements of their respective GES targets. Policies such as ECO2, BIO1 and MPA1 have the potential to contribute to the achievement of the targets related to this descriptor where these complement existing policy or represent new policy, therefore affording additional safeguards to the receptors of this SA topic.

Of those policies which seek to complement existing policy, the following can be seen to offer some protection to water quality either directly or indirectly. GOV1 and its supporting text seeks to ensure plans are in accordance with other relevant plans and policies including transboundary plans which would include numerous water protection and anti-pollution components. GOV1 also seeks to ensure that appropriate land-based allocation should be included for any onshore infrastructure requirements of marine activities and any potential impacts should be considered. The information provided under Objective 11 relates to the need to improve the gathering, sharing and monitoring of evidence which would relate to the significant amount of research and monitoring of marine water quality, for example through OSPAR.<sup>94</sup>

In terms of reducing the risk of flooding, the East marine plans include Policy CC1 which identifies that proposals should have regard to a) how they are impacted upon by, and respond to, climate change and b) how they may impact upon climate change adaptation measures elsewhere. This is consistent with the MPS and NPPF, and its supporting text identifies the important role of the EA, local authorities and others in coastal change management. It stipulates that consultation with these bodies should be carried out at the earliest opportunity. It is considered that this consultation would raise any concerns about whether or not the proposals would exacerbate coastal flood risk or erosion. This would also mean that associated development from offshore activity, such as cabling would be addressed collaboratively.

Having reviewed the policies above, it is considered that on balance, despite a possible slight (and uncertain) increase in offshore wind development and aggregates extraction compared with the no plans option, the East marine plans are unlikely to have a significant effect on overall water quality. Policy provisions for the protection of the water environment are provided which re-affirm existing mechanisms such as those described in the MPS and add to them with regard to minimising the risk of pollution through collisions. Provision is also given to the need to

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<sup>93</sup> For oil tankers of 150 tons gross tonnage or more and all ships of 400 tons gross tonnage, and an approved marine pollution emergency plan (SMPEP) for noxious liquid substances for all vessels of 150 tons gross tonnage carrying noxious liquid substances in bulk.

<sup>94</sup> The OSPAR (Oslo and Paris Conventions, for the protection of the marine environment of the North-East Atlantic) Convention is the current legal instrument guiding international cooperation on the protection of the marine environment of the North-East Atlantic.



consider the impacts of climate change at the coast. It is considered that, overall, other mechanisms such as the MSFD and WFD would have a greater impact. As such, the overall assessment of the East marine plans on the water environment is neutral.

### 4.11.3 Mitigation/Recommendations

A number of recommendations were made to mitigate for any adverse effects identified or enhance the East marine plans at earlier iterations of the SA. No further recommendations have been made at this stage.

### 4.11.4 Relevant post-consultation changes to the Marine Plans and Sustainability Appraisal

#### Post-Consultation Appraisal: Water Environment

Changes made to the marine plans subsequent to the draft plan consultation (July-October 2013) have very minor implications for Water Environment. As such, the differences between the appraisal findings presented above and those presented in the draft SA Report (July 2013) are minor. The following provides a summary consideration of relevant changes to the marine plans for this appraisal topic.

#### **General changes to plan policies, objectives, and related justification/policy context wording**

A number of plan policies of relevance to this topic involve a staged approach to considering their potential effects (e.g. see GOV3, WIND1, TIDE1, DD1, AGG3, CAB1, AQ1) which broadly set out that proposals should demonstrate how they would a) avoid, b) minimise or mitigate, or c) set out a case for proceeding where residual effects remain<sup>95</sup>. In response to consultation feedback on the marine plans, stage b (minimise or mitigate) has been split to initially minimise and then mitigate, introducing a new stage to the policy consideration. As both minimisation and mitigation of effects was a consideration of the draft policies, there are few individual policy implications with regards to the change on this SA topic. If the policies are used hierarchically as suggested, then it should encourage the adoption of measures to minimise impact prior to proceeding with mitigation, and that these should be demonstrated to the relevant authority.

#### **Relevant Changes to specific plan policies, objectives, and related justification/policy context wording**

There were no specific changes to policy wording that are considered to have a significant effect on the findings of the assessment above.

## 4.12 Cumulative Effects from Interaction with Existing Policies and Strategies

### 4.12.1 Introduction

This section considers the interaction between the East Inshore and East Offshore marine plans and the existing legislation, conventions, policies and strategies relevant to the area. The

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<sup>95</sup> Note that the MMO have clarified in the revised Marine Plans that those submissions under part d) of these policies, "...is to provide information for consideration by the relevant public authorities. It does not indicate that approval of a proposal will follow by default. In determining proposals the public authority/ies will take account of a range of relevant considerations including compliance with legislation and regulations and EIA where already required." It is also stated in paragraph 100 that part d) could apply, for instance, in the case of IROPI in relation to nationally significant infrastructure. Sustainability Appraisal of the East Inshore and East Offshore draft Marine Plans—Sustainability Appraisal Report



identification of potential conflicts and synergies is important from a perspective of wishing to understand the cumulative and synergistic effects of the East marine plans. Cumulative effects which may arise for each SA topic from the adoption of the plans are summarised in the appraisal tables (sections 4.3-4.10).

This section reviews existing high-level international, European and national policy commitments, before discussing potential interactions and any related potential for cumulative effects. A comprehensive list of other relevant plans and initiatives for each relevant SA topic is provided in Appendices A-H (see volume 3).

## 4.12.2 International Level

The UK has a wide range of policy commitments at the international level. The United Nations Convention on the Law of the Sea (UNCLOS) (1982) lays down rules governing uses of the ocean and its resources. The Convention governs all aspects of ocean space, such as delimitation, environmental control, marine scientific research, economic and commercial activities, transfer of technology and the settlement of disputes relating to ocean matters.

The UK is a member of the International Maritime Organisation, which has adopted a number of conventions relating to maritime safety and the prevention of marine pollution (see Appendix D), and which have been ratified into UK law. The principal international convention covering the prevention of pollution by ships is MARPOL. MARPOL addresses the prevention of marine pollution from ships and in part from oil rigs and production platforms. It includes six annexes covering pollution by oil, noxious liquids carried in bulk, harmful substances in packaged form, sewage, garbage and air pollution.

The Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR) (1992) is the mechanism by which fifteen governments of the western coasts and catchments of Europe together with the European Community cooperate to protect and manage the marine environment of the North-East Atlantic. It covers the prevention and elimination of pollution from land-based sources, including eutrophication and hazardous substances, the prevention and elimination of pollution by dumping or incineration, the prevention and elimination of pollution from offshore sources including offshore oil and gas, and the assessment of the quality of the marine environment, and the protection and conservation of the ecosystems and biological diversity of the maritime area.

Under the World Summit on Sustainable Development (WSSD) (2002), the UK committed to reducing the rate of biodiversity loss, encouraging the application of the ecosystem approach, establishing a network of marine protected areas, and to restore depleted fish stocks by 2015 to levels that will allow the achievement of Maximum Sustainable Yield (MSY). There are many other relevant agreements, such as those relating to wetlands (Ramsar) and the Convention on Biological Diversity (CBD).

## 4.12.3 European Level

At a European level the MSFD establishes a framework within which Member States must take measures to achieve or maintain Good Environmental Status (GES) in the marine environment by the year 2020. Marine planning will need to take into account any relevant targets, indicators or measures aimed at achieving GES under the MSFD<sup>96</sup>. These measures include the

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<sup>96</sup> See: HM Government (2012). Marine Strategy Part One: UK Initial Assessment and Good Environmental Status, 163pp.

establishment of a coherent network of marine protected areas (MPAs) which is intended to build on the areas already protected as European marine sites under the Birds Directive and Habitats Directive (see below), though the requirements for a coherent network come from the CBD and WSSD.

In addition to the MSFD, the WFD (2000/60/EC) has implications for transitional (estuarine) and coastal waters (out to 1 nautical mile (nm)), as well as all terrestrial surface waters, groundwater and terrestrial ecosystems which are water dependent. Similar to the MSFD, the WFD seeks to achieve “good ecological and chemical status/potential” for those water bodies mentioned above by 2015. RBMPs now completed for England and the devolved administrations are one of the principal means by which the WFD has been implemented in the UK and will be used in combination with other plans including SMPs (see below) to achieve a fully integrated approach to coastal management. Coastal waters under the WFD overlap with the geographical area of those under MSFD, though it is regarded that those measures under WFD and its related Directives are sufficient to achieve GES under MSFD for certain descriptors (8, 5 and 7), with those related to litter, noise and some aspects of biodiversity providing for additional action in coastal waters<sup>97</sup>.

The Common Fisheries Policy (CFP) is the European Union’s instrument for the management of fisheries and aquaculture. It applies to fishing in all European waters and to European vessels fishing beyond European waters. The CFP sets Total Allowable Catches (TACs) for certain species, and allocates quotas to Member States, based on the principle of Relative Stability.

The Renewable Energy Directive aims to promote the use of renewables forms of energy, particularly through the implementation of a commitment to provide 20% of energy use from renewable sources by 2020<sup>98</sup>.

The Habitats Directive (Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora) aims to promote the maintenance of biodiversity through the establishment of a coherent network of protected areas made up of Special Areas of Conservation (SACs). Additionally the Birds Directive (2009/147/EC) provides for the establishment of Special Protection Areas (SPAs) for the conservation of rare, vulnerable or migratory birds. The Habitats Directive includes a requirement for a Habitats Regulations Assessment (HRA) to assess potential impacts of development plans/projects that are likely to impact on SACs or SPAs.

The Ambient Air Quality and Cleaner Air for Europe Directive (2008/50/EC) came into force in June 2008. Though the directive did not alter existing air quality objectives, it consolidated a number of other Directives (Framework Directive 96/62/EC, daughter Directives 1999/30/EC, 2000/69/EC, 2002/3/EC, and Decision on Exchange of Information 97/101/EC) and included other key elements such as possible time extensions of three or five years for certain emissions (e.g. PM<sub>10</sub>, NO<sub>2</sub> and benzene) and a new objective for PM<sub>2.5</sub>, which may have an impact for shipping.

EC Directive Port Reception Facilities Directive 2000/59/EC (2000) pursues the same aim as the 73/78 MARPOL Convention on the prevention of pollution by ships, which all Member States have signed. However, in contrast to the Convention, which regulates discharges by ships at sea, the Directive focuses on ship operations in European Union ports.

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<sup>97</sup> HM Government (2012). Links between the Marine Strategy Framework and Water Framework Directives, Factsheet 1, 3pp.

<sup>98</sup> Also see: EC (2014). A policy framework for climate and energy in the period from 2020 to 2030. COM(2014) 15 final, 18pp, [http://europa.eu/rapid/press-release\\_IP-14-54\\_en.htm](http://europa.eu/rapid/press-release_IP-14-54_en.htm)

## 4.12.4 National Level

The Marine and Coastal Access Act (MCAA) 2009<sup>99</sup> aims to achieve the UK vision for the marine environment<sup>100</sup> by introducing a marine planning system, streamlining the licensing process for specified marine activities, establishing a network of Marine Conservation Zones (MCZs) for conserving marine biodiversity (including geomorphological and geological features), introducing a duty to allow coastal access including the establishment of a complete English coastal trail, and the establishment of the Marine Management Organisation (MMO). In addition, the Marine and Coastal Access Act amends the Wildlife and Countryside Act 1981 in such a way that SSSI notifications can be made in England and Wales below the Mean Low Water Mark (MLWM) under certain statutory conditions set out in the Act (e.g. the flora, fauna or features leading to the notification of the SSSI are also present in the subtidal area to which SSSI protection is to extend). The Act also provides powers to remove SSSI notifications where they coincide with new MCZs in England and Wales. The provisions of the Act are expected to, amongst other things, contribute to the achievement of GES under the MSFD<sup>101</sup>.

The UK MPS<sup>102</sup> is the first stage of the new UK system of marine planning. It establishes how decisions affecting the marine environment should be made, and sets out the framework for preparing marine plans. The UK vision for the marine environment is set out in the MPS<sup>103</sup> as being ‘clean, healthy, safe, productive and biologically diverse oceans and seas’.

Marine plans will complement existing national scale legislation and policy such as the Planning Act 2008, NPPF, NPS and the regime for consents of nationally-significant infrastructure projects; as well as local and regional level plans, such as non-statutory SMPs.

The NPPF (2012) complements the achievement of the objective of sustainable development incorporated into the MPS, and makes clear that the planning system must fulfil a number of roles: economic (contributing to a strong, responsive and competitive economy), social (supporting strong, vibrant and healthy communities), and environmental (contributing to protective and enhancing the natural, built and historic environment). The NPPF states that local planning authorities should take account of the UK MPS and marine plans and apply Integrated Coastal Zone Management across local authority and land/sea boundaries, as well as referencing relevant areas of the MCAA (e.g. in relation to coastal access).

The NPSs for Energy set out policy for nationally significant energy infrastructure, as defined in the Planning Act 2008. These have effect, in combination with the relevant technology-specific NPS<sup>104</sup>, on the decisions by the Planning Inspectorate on applications for energy developments that fall within the scope of the NPSs, which may be terrestrial or marine.

The NPS for Ports, approved in January 2012, recognises the crucial role of ports in sustaining the UK’s economy, and the need for ports to be able to adapt and operate efficiently as gateways to international trade.

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<sup>99</sup> HM Government (2009) Marine and Coastal Access Act 2009.

<sup>100</sup> See: Our seas – a shared resource. High Level Marine Objectives. 12pp.

<http://archive.defra.gov.uk/environment/marine/documents/ourseas-2009update.pdf>

<sup>101</sup> See individual appraisal sections (4.3-4.10) for reference to where the Marine Plans may contribute to these aims.

<sup>102</sup> HM Government (2011) UK Marine Policy Statement

<sup>103</sup> HM Government (2011) UK Marine Policy Statement

<sup>104</sup> Technology-specific NPSs include fossil fuel electricity generation (EN-2); renewable electricity; generation (both onshore and offshore) (EN-3); gas supply infrastructure and gas and oil pipelines (EN-4); the electricity transmission and distribution network (EN-5); and nuclear electricity generation (EN-6)

The Marine Works (EIA) Regulations (2007) (as amended<sup>105</sup>) set out a formal process to consider whether or not an Environmental Impact Assessment (EIA) is required for any Marine Licensable activities in England.

The National Fisheries Policy, 'Fisheries 2027: a long-term vision for sustainable fisheries' (Defra, 2007) sets out the Government's view for future fisheries policy by providing directions for everyone with an interest in marine fisheries. The focus is on activities in England within British Fisheries Limits adjacent to England and is therefore relevant for the East Coast Marine Plan area.

The UK Low Carbon Transition Plan (2009) set out the UK's first comprehensive carbon plan to 2020. It detailed how targets for UK greenhouse gas reductions from the first three carbon budgets will be achieved. The more recent Carbon Plan outlines how the UK Government propose to transition to a low carbon economy while maintaining security of supply and minimising costs to consumers within the context of national energy policy and carbon reduction commitments (e.g. as indicated in the Carbon Budget), over the next 10 years. Emissions reductions are expected through a combination of efficiency measures and the use of low carbon technologies, including renewables.

The Marine Energy Action Plan (DECC, 2010) sets out an agreed vision for the marine energy sector to 2030. It outlines the actions required by both private and public sectors to facilitate the development and deployment of marine energy technology. It covers wave, tidal range and tidal stream energy.

#### 4.12.5 Local Level

The Localism Act (2011) places new responsibilities on the MMO together with other decision making authorities to work together on planning issues. The formation of Local Enterprise Partnerships (LEP) such as the New Anglia and Humber (LEP) within the plan areas places additional obligations on decision-making authorities through the need to consider them in formulating marine plans and any subsequent revisions to them.

#### Biodiversity Action Plans and Shoreline Management Plans

A second round of SMPs (often referred to as SMP2s) have recently been completed along the east coast, and aim to provide guidance for sustainable coastal management, with the core aims focussing upon the management of coastal flooding and erosion. Local Biodiversity Action Plans (LBAPs) seek to support many of the long-term SMP coastal management aims and objectives, particularly with regard to managed realignment and the associated flood defence implications. The core sources of information on SMPs and LBAPs are not geographically integrated, hence are provided below in two separate sections.

#### Local Biodiversity Action Plans

##### **Humber<sup>106</sup>**

The need to provide a sustainable long-term plan (encompassing flood risk and environmental matters) for this area is supported by the Humber Estuary being designated as an SPA, SAC, Ramsar and covering 60 SSSI units.

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<sup>105</sup> See amendments to the 2007 Regulations as made in The Marine Works (Environmental Impact Assessment) (Amendment) Regulations 2011 which relate to the MCAA coming into force.

<sup>106</sup> <http://www.hull.ac.uk/HBP/ActionPlan/Estuary.htm>

## **Lincolnshire<sup>107</sup>**

In Lincolnshire there are 41 LBAPs; each describing the habitat or species of concern, its status in Lincolnshire and current threats. Each plan also looks to the future – detailing objectives, targets and actions in increasing levels of detail. The coastline is characterised by alternating areas of erosion and flood risk, with the high consequences of defence failures being potentially hazardous.

## **Norfolk<sup>108</sup>**

Grazing marsh is an extensive habitat within Norfolk, estimated to cover some 29,500 hectares. Much of the resource is found in the Broads Natural Area, the North Norfolk Coast. A large proportion of the grazing marsh resource is protected by SSSI designation (which within the Broads is also a recognised Special Protection Area and Ramsar site and candidate Special Area of Conservation). Those on the North Norfolk Coast are recognised as a Special Protection Area and a Ramsar site. The LBAP aims to maintain its extent and quality. Dunes also form important conservational features and sea defences.

## **Suffolk<sup>109</sup>**

Some 800ha of grazing marshes are designated as SSSI and most of these are also protected through such international designations as SPA and Ramsar sites. About 90ha are also designated as SACs. Most of the ecologically-important grazing marshes are managed by either English Nature as National Nature Reserves, the RSPB, the National Trust or the Suffolk Wildlife Trust. Almost all Suffolk sand dunes fall within SSSIs, or County Wildlife Sites; whilst they do fall within the Suffolk Coast and Heaths Area of Outstanding Natural Beauty and the area designated as Heritage Coast. The EA and local authorities have a statutory duty to conserve the functionality of sand dunes.

## **Shoreline Management Plans**

### **Flamborough Head to Gibraltar Point<sup>110</sup>**

The Humber Estuary is within the Flamborough Head to Gibraltar Point SMP. The SMP emphasises that much of the Holderness coastline has been subject to rapid erosion. Due to the presence of human settlement at the coastal fringe, there are many conflicting local issues and objectives. The floodplain of the outer Humber Estuary includes some of the most productive agricultural land in the UK and major concentrations of industrial and commercial properties. In Lincolnshire flooding is the core issue, as there are extensive areas of land at or just above present day sea level. The coastal area also contains some important industrial sites including natural gas storage and processing facilities; chemical works; oil storage; power generation; and other manufacturing, processing and storage infrastructure. The SMP also identifies that Tourism is a key industry along much of the SMP frontage. Tourism is an important contributor to the local economy with numerous EC-designated bathing beaches along the Holderness coast.

### **North Norfolk<sup>111</sup>**

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<sup>107</sup> [http://www.lincsbiodiversity.org.uk/bap\\_intro.php](http://www.lincsbiodiversity.org.uk/bap_intro.php)

<sup>108</sup> <http://www.norfolkbiodiversity.org/actionplans/>

<sup>109</sup> <http://www.suffolkbiodiversity.org/biodiversity-action-plans.aspx>

<sup>110</sup> <http://www.hecag-smp2.co.uk/>

The North Norfolk SMP covers the length of coast between Kelling Hard in North Norfolk and Lowestoft Ness in Suffolk. This area is largely self-contained with respect to coastal processes, and contains iconic, scenic stretches of coastline. All areas are liable to erosion and/or flooding. The Norfolk Broads are Britain's largest nationally protected wetland totalling 303 sq km. This area is internationally important both for its conservation value and tourism and recreation. Great Yarmouth is the major economic centre within this SMP, and justifies full protection against erosion or flooding. Numerous assets and sizable villages would be affected by loss of defences throughout the SMP area. Consequently, the policy options for this area continue to provide defences where justifiable for the immediate future, but with a long term plan to gradually retreat and relocate, thus enabling a naturally functioning sustainable system to re-establish.

### **Suffolk**<sup>112</sup>

The Suffolk SMP covers 72 km of coastline between Lowestoft Ness and Felixstowe Landguard Point and includes four major towns - Lowestoft, Southwold, Aldeburgh and Felixstowe - and many smaller towns and villages, all within the coastal strip. The shoreline area is essential for the local, regional and national economy; relying heavily on shoreline-related tourism, agriculture, two major ports and several smaller harbours. The risk of erosion threatens homes, businesses and other assets in all the major towns and several of the smaller villages. Coastal flood risk is also a problem, with natural habitat, agricultural land and transport systems at threat.

### **The Wash**

The Wash SMP covers approximately 110km of coast from Gibraltar Point to Old Hunstanton. The boundaries at Gibraltar Point and Old Hunstanton match the neighbouring SMPs (Flamborough Head to Gibraltar Point SMP and North Norfolk SMP). The Wash is a major open embayment with fringing saltmarshes. The Wash marshes (totalling more than 4,000ha) are the largest continuous expanse of saltmarsh in Britain, despite extensive land reclaim. In the short-term, the policy option for most SMP zones is to hold the line, with managed realignment a possibility in the medium to long-term, particularly if climate change induced sea-level rise causes a significant loss of salt marsh and mud flat in front of the seabanks. The policy for the Hunstanton Cliffs section is no active intervention in the short to medium term (i.e. to 2055).

### **Essex and South Suffolk**<sup>113</sup>

The Essex and South Suffolk SMP covers approximately 500km of coastline from Landguard Point in Felixstowe to Two Tree Island in the Thames Estuary. Most of the estuarine areas are dominated by muddy intertidal flats and saltmarshes. In areas of open coast there are a range of coastal features including London Clay sea cliffs and shingle, sandy and muddy beaches. Many of these coastal features are designated for their national and international importance. Flood defence is a key issue and parts of Ipswich town, the ports of Harwich and Felixstowe with their ferry services, cargo shipping and the Petrochem Carless refinery are at risk of flooding. There are various sites recognised to have potential for the development of offshore renewable energy projects. The possibility of a barrier or barrage in the outer Thames Estuary has been raised in the course of the development of the SMP. There are important recreation and tourism areas. Bradwell nuclear power station is currently being decommissioned; however, plans for development of a new nuclear plant on the site and flooding or undermining of this site

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<sup>111</sup> <http://www.northnorfolk.org/coastal/9871.asp>

<sup>112</sup> <http://www.suffolksmp2.org.uk/>

<sup>113</sup> <http://www.suffolkcoastal.gov.uk/yourdistrict/coastalprotection/essexsmp/>



would cause numerous issues. Southend-on-Sea is among the most populous and densely developed communities in the Essex and South Suffolk SMP area and functions as a regional coastal resort.

## Economic development plans

Most economic development plans that are directed by local authority and government initiatives typically concern time-scales of 1-5 years. Longer-term investment and larger economic implications along the east coast are likely to be driven by development of the UK's energy infrastructure. There are numerous areas with proposed developments in offshore renewables and nuclear power. A significant long-term development is the possibility of a new international airport in the Thames Estuary. Although not likely to be implemented in the near future, pressure for this has led to the proposal of sites including Maplin Sands, Foulness on the north side of the estuary; Cliffe, Kent and the Isle of Grain on the south side; and artificial islands located off the Isle of Sheppey.

### Humber

East Riding of Yorkshire Council regularly undertakes a Local Economic Assessment (LEA). Many economic indicators (e.g. unemployment, people in training etc) suggest that the region is close to or achieving slightly positive results in comparison to the national average. The economy and skill base is quite diverse, although economic stability very much centres upon the Humber Ports; which have continued to achieve a steady growth in throughput and, in terms of tonnage, are the UK's largest ports complex. Key economic strong points in terms of the tourist industry include the Humber Bridge, Spurn Point, and Flamborough Head; although coastal erosion/flood risk represent key threats. The existing employment rate is over 80%, but there is a real prospect of labour and skills shortages that need to be addressed by encouraging more young people to stay in the area, and achieving a higher level of workforce participation amongst residents of the Hull City Council area.

The Norfolk Local Economic Assessment<sup>114</sup> identifies agriculture as the dominant land use in Norfolk. Many agricultural activities are small enterprises, so agriculture is of less significance in terms of the number of people directly employed in the sector. Norfolk is arguably the most self-contained labour market in the east coast region, in part due to its peripheral/coastal location, but also due to the distance from other regional cities and the limited connectivity of the transport network. In 2007, 64.6% of VAT registered enterprises in the county were located in rural locations, compared with an England average of just 29.3%. Despite being a large rural county, most of the jobs (56%) are situated in the urban areas. The most significant sector in Norfolk, in employment terms, is the public sector, which in 2008 employed 27.4% of the working population (which is slightly more than the national average of 26.3%), although a reduction in public sector employment is also expected. The tourism industry is vital for supporting employment across the whole of Norfolk, but is especially important in Norwich, along the north Norfolk coast, in the Broads and the east coast resorts of Gt. Yarmouth and Lowestoft. In 2008, employment in accommodation and food service activities accounted for 7.1% of the jobs in Norfolk.

Suffolk County Council's 2011 Local Economic Assessment<sup>115</sup> Suffolk has a strong presence in the oil and gas industry with Lowestoft strategically located for accessing North Sea oil and gas

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<sup>114</sup> <http://www.norfolk.gov.uk/view/ncc085925>

<sup>115</sup>

<http://www.suffolk.gov.uk/assets/suffolk.gov.uk/Business/Business%20Services/Economic%20development/Final%20Assessment.pdf>



operations. In Suffolk there are in excess of 400 offshore and energy related businesses (located in or close to Lowestoft) and there are an estimated 8,000 people employed in the energy sector. Great Yarmouth is the second busiest oil and gas support port in the UK, whilst the Port of Lowestoft is playing an increasingly important role in supporting this work. A larger potential source of future income is the nuclear power industry. Sizewell, on the Suffolk coast is home to Sizewell B which was the last nuclear plant to be built in the UK. The nuclear industry is set to expand and Sizewell in Suffolk is the location of one of the 10 proposed new nuclear sites with an additional site located in Essex. The construction of one nuclear power station is likely to require at least 5000 people for approximately 7 years and create 900 operational jobs.

## 4.12.6 Identification of potential interactions

### Economic East marine plan Objectives and Associated Policies

The economic policies encourage productivity and associated employment benefits and are likely to contribute cumulatively to the overall positive effect of the plan for UK Growth (2011). There is specific support for local enterprise partnerships (LEPs), where there is a combination of commercial interest, and traditional or developing industrial strengths in maritime and offshore engineering, and designated these areas as CORES (Centres for Offshore Renewable Engineering). CORES include Humber (North & South bank) and New Anglia (Great Yarmouth & Lowestoft).

A number of policies support the Electricity Market Reform (EMR) White Paper (2011) and the 2012 Carbon Plan which identifies a number of key measures to attract investment and create a secure mix of electricity sources including gas, new nuclear, renewables and CCS. Several of the policies (including those relating to CCS, oil and gas, wind and tidal energy) are likely to contribute cumulatively to these sectors and are therefore likely to have interactions with policies in NPS EN 1-5 and the NPPF for non-Nationally significant projects, though it is uncertain as to the degree of influence the plan may have on these activities, though it is supportive of policy of promote their deployment. Additionally aggregates policies support existing Government policy<sup>116</sup> which recognises that marine aggregates play a key role in servicing the nation's demand for construction aggregate, essential for the development of our built environment, and supplying materials for the maintenance of coastal and flood protection defences required for climate change adaptation (e.g. as recognised in SMPs). Positive interactions are therefore expected between the East marine plans and these documents.

### Social Marine Plan Objectives and Associated Policies

The social policies recognise cumulative landscape and seascape effects can occur, including for dependent tourist economies (though see discussion in Section 4.9). SOC1 supports the coastal access duty created under the MCAA<sup>117</sup> and SOC3 supports policies at a local or national level focused on maintaining seascape character. SOC2 reinforces the protection of heritage assets and has a potential for a positive cumulative effect on wider policies such as the European convention of the Protection of the Archaeological heritage (or Valetta convention). Similarly, the range of economic policies and programmes identified above are likely to have a cumulative positive effect on socio-economic regeneration along the coast together with the East marine plans.

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<sup>116</sup> See: Marine Mineral Policy Guidance 1: Extraction by dredging from the English seabed.

<sup>117</sup> HM Government (2009) Marine and Coastal Access Act 2009.

## Environmental marine plan Objectives and associated policies

The environmental policies reinforce and strengthen existing policies and reflect requirements set out in a broad range of other initiatives such as the MPS, WFD, MSFD and local management plans. In particular MPA1 supports the OSPAR recommendation on a network of Marine Protected Areas. There is currently a lack of evidence to assess the cumulative effects of various developments in the marine area on different receptors, and therefore to be able to have a more prescriptive and spatially explicit set of marine plans which could set limits and thresholds for activities at this stage. The commitment of the MMO to develop the evidence base (Objective 11) and related Strategic Evidence Plan (SEP), and the requirement to keep the plans under review, may allow for a such an approach, as appropriate, in the future as the plan making process develops.

## Climate change Objectives and associated policies

Through encouraging considerations relating to climate change, including minimising emissions of greenhouse gases during the life cycle of a project (see Section 4.3), the climate change policies support International and national scale aspirations for greenhouse gas reductions as outlined in, for instance, the UK Climate Change Act 2008 and UK Government Carbon Plan. These policies, in combination with existing measures to assist in GHG reduction (e.g. the EU-ETS, policies relating to CCS and funding opportunities for demonstration), are likely to have positive cumulative effects in the medium to longer term. Positive interactions are therefore expected between the East marine plans and these documents.

## Governance Objective and Associated Policies

The governance policies are likely to contribute cumulatively to the overall positive effect of additional policies by supporting NPS documents and local management plans (SMPs and RBMPs), and through the promotion of co-location and an integrated approach to decisions made with regards to development at the coast.

### 4.12.7 Discussion

The significance of cumulative effects resulting from a range of activities, or multiple incidences of one activity, may vary based on factors such as the nature of the projects proposed and the sensitivity of the receiving communities and environment. The large majority of the policies in the plan are generic or criteria-based policies without a clear spatial dimension. It is therefore difficult to assess the extent to which the implementation of these policies might conflict with other existing economic, social or environmental policies other than at a high level as this will substantially be determined by the spatial locations where the marine policies are given effect. The marine plan policies do not create a presumption in favour of development or allocate space for activities in the way that land-use plans can, instead they highlight key resource areas and support certain activities and co-location where possible. In view of the above, and as these are the first marine plans to ever be produced, it is unclear as to the extent of influence they will have on the implementation of marine activities compared to the situation without them (i.e. under the MPS and the present regulatory system). This is why monitoring of the implementation is so vital so that information can be gathered to benefit future plans and their ongoing reviews. It is also, therefore, important to recognise these positive interactions and synergies with the existing framework of plans, policies and laws for the marine area. The East marine plans do create a presumption in favour of sustainable development and therefore any developments coming forward would need to conform to other existing policies unless relevant considerations indicated otherwise. The policies in the plan provide a wide range of community and environmental considerations which should, to an extent, serve to limit the impacts of individual projects.

The effects of marine planning for some sectors (CCS, tidal energy, oil & gas and offshore wind) have already been assessed within the Offshore Energy SEA 2 (DECC, 2011). Those policies relating to these sectors largely reaffirm existing policy and planning mechanisms, or else are in keeping with the aspirations and trajectory for these sectors in the plan areas. Furthermore, it should be recognised that, among others, the MPS, NPSs and SEA and EIA procedures also provide mechanisms to assess and control potential environmental effects.

For marine aggregate extraction, the Humber and Anglian Marine Aggregate Regional Environment Assessments (MAREAs) also provide an assessment of the environmental effects of most of the existing licences in the marine plan areas. While there is some potential for future developments under these policies to generate cumulative effects on communities and the environment, there is also significant potential to mitigate potential adverse impacts through existing provisions (e.g. careful site selection and project design/mitigation such as that already used in the EIA process), and the East marine plans are supportive of these, particularly where they relate to statutory conservation obligations, though with some emphasis on wider marine habitats and species (BIO1). Existing provisions also include introduction of exclusion areas or other management measures, for example, MPAs or UK Biodiversity Action Plan (BAP) features underpinned by rigorous monitoring in line with existing requirements such as for OSPAR, WFD and MSFD, amongst others.

It is not predicted that the marine plan policies could potentially create conflict with existing UK orientated environmental and community policies and generate adverse effects, as they largely reflect the existing policy and legislation. In terms of effects on adjacent state territories due to activities within the East marine plans' area, these are likely to be less than those within UK waters. Given the existing range of control mechanisms it is not anticipated that potential transboundary effects would be significant.

# 5 PROPOSED MEASURES TO MONITOR SIGNIFICANT EFFECTS

The SEA Directive and the Regulations require that the plan or programme is monitored to test the actual significant effects of implementing the plan against those predicted through the assessment.

This section explains the purpose of monitoring in the SEA process and sets out an indicative monitoring framework.

## 5.1 The Purpose of Monitoring

Monitoring in the SEA process allows the actual significant environmental effects of implementing the plan or programme to be tested against those predicted. It, therefore, helps to ensure that any undesirable environmental effects are identified and remedial action is implemented accordingly.

The process of monitoring can also be used to determine how the plan or programme is performing against objectives and targets, to improve the SA process by providing feedback on the accuracy of predictions and to overcome gaps in baseline data that can be used in future SEAs.

Although monitoring is the last stage in the SA process, it is a very valuable one which can contribute to the improvement of decision-making and the protection of the environment in the long-term.

## 5.2 The Approach to Monitoring

The Practical Guide states that *'the Directive's provisions on monitoring apply when the plan or programme is being put into effect, rather than during its preparation and adoption. However, preparations for monitoring will need to be considered in the course of preparing the plan or programme'*.

The East marine plans themselves will not lead to direct sustainability effects but effects will occur when the guidance in them is used by decision makers to grant consent for particular activities, promote new initiatives or support new designations within the marine environment.

The East marine plans are not very spatially specific and the exact types, locations or quantities of development that will be granted consent or a licence are still subject to developer activity and market forces. For this reason, a wide range of potential sustainability effects are possible and the likelihood of such effects occurring will depend upon how the policy presented in the plans is used and applied. For this reason, and that the East marine plans include a great deal of re-affirmation of existing policy, the monitoring for the East marine plans will focus upon key trends within the marine environment generally. The monitoring process will be able to identify whether there are improvements in conditions and trends, although it will not necessarily be possible to attribute this to the East marine plans specifically.

The monitoring process should be focused upon the significant sustainability effects that are predicted through the SA (both positive and negative). Effects that should be monitored are those:

- That are likely to breach international or national legislation, guidelines or standards;

- That could potentially result in irreversible damage, with the aim being to identify such trends before the long-term damage is caused;
- Where there is uncertainty linked to the prediction and, therefore, monitoring is needed to determine whether the prediction was correct and if further mitigation may be needed in the future.

The monitoring process should draw as far as possible upon existing monitoring programmes and the frameworks set up to coordinate them such as UKMMAS (see below) and the Marine Climate Change Impacts Partnership (MCCIP) and this should be possible for the East marine plans using some of the examples provided below.

- The National Atmospheric Emissions Inventory
- The evidence base for Charting Progress 2
- OSPAR monitoring programme updates
- The monitoring programmes developed for the MSFD

The UK Marine Monitoring and Assessment Strategy (UKMMAS) is a coordinated and integrated approach to marine monitoring and assessment. Its overall aim is to shape the UK's capability, within national and international waters, to:

*"provide, and respond, within a changing climate, to, the evidence required for sustainable development within a clean, healthy, safe, productive and biologically diverse marine ecosystem and within one generation to make a real difference."*

The UKMMAS is delivered through a number of groups. A high-level policy committee and the Marine Assessment and Reporting Group (MARG) which contains a number of sub-groups. MARG identifies means of carrying out assessments to meet policy needs, with existing resources and scientific knowledge. MARG directs the implementation of suitable programmes, reviews outcomes and assessments and suggests changes to monitoring programmes as needed. As such, it is proposed that the AoS monitoring framework is further developed to be closely aligned with MARG and the UKMMAS.

It is intended that a review of the monitoring for each effect is undertaken on a six yearly basis to coincide with monitoring for the MSFD and WFD although this should be refined as appropriate. This will enable a sufficient body of data to be developed that can be used to monitor trends and performance. This should aim to coincide with review of the East marine plans.

## 5.3 The Monitoring Framework

The outline monitoring framework is based around the SA topics and includes the following elements:

- The potentially significant effect that may need to be monitored
- A potential monitoring indicator
- The potential data source and frequency of monitoring

**Table 5-1 Outline Monitoring Framework**

| SA Topic               | Effect to be monitored  | Monitoring measure  | Source (frequency)   |
|------------------------|---|---|--|
| Air and climate        | <p>The plans are expected to have a positive effect on the development of offshore windfarms.</p> <p>The Plan should have the effect of avoiding sterilisation of areas suitable for CCS and tidal stream technologies.</p> <p>The SA questions the appropriateness of the policy support that is given in relation to greenhouse gas offsetting at the expense of minimisation.</p>  | <p>The actual trajectory of offshore renewable wind energy development (i.e. installed capacity) should be reviewed regularly in-light of the expected baseline trajectory. It may also be useful to monitor the success rate of applications before and after adoption of the plans.</p> <p>Depending on the number of applications that come forward it may also be possible to analyse the influence of the plans through discussion with applicants.</p> <p>The 'sterilisation' of areas suitable for CCS or tidal stream technology should be monitored closely.</p> <p>The scale of greenhouse gas offsetting that is allowed (at the expense of minimisation) should be monitored closely.</p> | <p>Review of planning applications</p> <p>Discussions with applicants.</p> <p>Discussion with representatives of CCS / tidal industries.</p> |
| Communities and Health | <p>The positive effect of the plan on offshore windfarm development is expected to result in economic growth at locations where this has the potential to address existing socio-economic problems.</p> <p>The negative effect of the plan on ports and shipping could have negative implications in terms of communities and health.</p> <p>No significant effects are expected in terms of fishing communities, although there is some uncertainty.</p> <p>The plan supports tourism and recreation development, where it will result in tourism diversification.</p> | <p>The MMO should support local authorities as they look to monitor the drivers of socio-economic deprivation / regeneration in certain coastal communities</p> <p>A suite of indicators could be developed to monitor the success of ports and related business activities.</p> <p>The health of fishing fleets should be monitored closely.</p> <p>Use of Policy TR3 as part of Local Authority decision-making could be monitored.</p>   | <p>Specific indicators will generally be established as part of other (e.g. local authority) monitoring frameworks.</p>                      |
| Cultural Heritage      | <p>Many marine activities have the potential to result in adverse impacts on the historic environment. There is</p>   | <p>Review of archaeological assessments and surveys completed as part of development consent process</p>  | <p>Heritage conservation bodies (review for updates every 6 years)</p>   |

| SA Topic       | Effect to be monitored   | Monitoring measure  | Source (frequency)   |
|----------------|--|---|--|
|                | <p>uncertainty about the scale and location of new activities. The East marine plans seek to reinforce existing heritage protection policy and in some cases slightly add to it. Effects are likely to be neutral to minor positive.</p>   | <p>for offshore schemes.<br/>Review of National Heritage Protection Plan research.<br/>Review of coastal historic seascapes research.<br/>Encourage completion of OASIS records.</p>  |  |
| Marine Ecology | <p>Effect of developments which have the potential to undermine WFD and MSFD targets for criteria related to biodiversity and ecology.<br/>Effect of developments which have the potential to undermine management measures/conservation objectives of MPAs designated wholly or in part for ecological criteria, and for other habitats and species of principal importance for the conservation of biodiversity.<br/>Though providing some further definition to the MPS, there is still some uncertainty about the potential scale and location of new activities and developments within the overall context of the potential resource areas (e.g. aggregates, offshore wind, CCS, gas storage and extraction) , and the possible nature of displacement that could take place (e.g. fisheries)..<br/>Related to the above, gaps remain in the marine ecology evidence base for the east marine plan areas</p> | <p>Number, extent, condition and trajectory of MPAs and the features for which they have been selected.<br/>Review of ecosystem appraisals as part of the OSPAR QSR and UK Charting Progress assessments, and any assessments undertaken to support the implementation of the MSFD.<br/>Review the achievement of GES indicators and targets associated with MSFD descriptors 1, 2, 4, 5, 6, 7, 8, 10 and 11 for the east inshore and offshore marine plan areas.<br/>Fulfilment of evidence gaps/priority research areas outlined in the Strategic Evidence Plan, and achievement of commitments to evidence gathering under plans paragraph 441.<br/>Applications made in conformity with those policies relevant to this SA topic (see Annex I), though particularly BIO1-2 and MPA1.<br/>Review of Marine Licence (e.g. formerly FEPA) monitoring for individual OWF/marine renewables developments.<br/>MMO report to government on the delivery of marine plan objectives and policies.</p> | <p>Nature conservation agencies<br/>MSFD monitoring.<br/>Relevant decision making authorities.<br/>(review every 6 years)<br/>Habitats and Wild Birds<br/>Marine Evidence Group<br/>MMO (annually – in relation to delivery of the SEP)<br/>OSPAR (every 10 years)<br/>DEFRA (periodically)<br/>CEFAS (periodically)<br/>MMO (every 3 years)</p> |
| Economy        | The positive effect of the plan on offshore windfarm   | The MMO should support local authorities as they look   | Specific indicators will generally be established as   |



| SA Topic  | Effect to be monitored  | Monitoring measure   | Source (frequency)  |
|---|---|--|---|
|   | <p>development is expected to result in economic growth at locations where this has the potential to address existing socio-economic problems.</p> <p>The negative effect of the plan on ports and shipping could have negative implications given the importance of ports for sustainable economic growth.</p>   | <p>to monitor the drivers of socio-economic deprivation / regeneration in certain coastal communities</p> <p>A suite of indicators could be developed to monitor the success of ports and related business activities.</p>   | <p>part of other (e.g. local authority) monitoring frameworks.</p>  |
| <p>Geology, Geomorphology and Coastal Processes</p> | <p>Marine and coastal activities have the potential to influence coastal processes including sediment dynamics, which may have deleterious effects, including generating or exacerbating coastal flood and erosion risk.</p> <p>Effect of developments which generate physical disturbance on WFD and MSFD targets which include morphological criteria.</p> <p>Effect of developments which generate physical disturbance on MPAs designated wholly or in part for geological or geomorphological interests.</p> | <p>Review the achievement of GES indicators and targets associated with MSFD descriptor 7 for the east inshore and offshore marine plan areas.</p> <p>Review of achievement of GES/GEP with regards to water body morphological status associated with the WFD (e.g. coastal and estuarine waters).</p> <p>Number and extent of MPAs designated wholly or in part for geological or geomorphological criteria, the condition of these features and their trajectory of change.</p> <p>Applications made in conformity with those policies relevant to this SA topic (see Annex I), though particularly CC1, BIO1 and MPA1.</p> <p>MMO report to government on the delivery of marine plan objectives and policies.</p> | <p>MSFD and WFD monitoring.</p> <p>Nature Conservation Agencies (Natural England and JNCC for inshore and offshore waters respectively).</p> <p>(review every 6 years)</p> <p>MMO (every 3 years)</p> |
| <p>Landscape and Seascape</p>                       | <p>Offshore activities can have effects on the coastal landscape and seascape whether these are permanent or transient. These may affect both designated areas (e.g. AONBs, Heritage Coasts, Scheduled Monuments, National Parks), and all other landscapes which will have cultural and historical associations for</p>  | <p>Review of seascape and visual assessments completed as part of development consent process where available.</p> <p>Review of consenting decisions in relation to policy SOC3.</p> <p>Review of changes in each character area relevant to the east marine plan areas.</p> <p>MMO report to government on</p>  | <p>Relevant decision making authorities.</p> <p>(review every 6 years)</p> <p>MMO (every 3 years)</p>   |

| SA Topic          | Effect to be monitored   | Monitoring measure   | Source (frequency)                             |
|-------------------|--|--|--|
|                   | <p>particular individuals.</p> <p>There is some uncertainty about the location of new activities.</p>  | <p>the delivery of marine plan objectives and policies.</p>  |  |
| Water Environment | <p>Developments and other activities at the coast and sea can have adverse effects on water including failure to meet environmental objectives established under the WFD and in due course the MSFD. There is uncertainty about the scale and location of new activities.</p> <p>The East marine plans are not expected to significantly affect the water environment.</p> | <p>Relevant indicators collated by the Clean and Safe Seas Evidence Group (part of the UK Marine Monitoring and Assessment Strategy) may be of relevance</p> <p>Monitoring carried out as part of WFD and MSFD commitments</p> | <p>MSFD and WFD monitoring (every 6 years)</p> |

## 6 NEXT STEPS

### 6.1 Adopting the Plan

The draft East marine plans and associated documents (including this SA NTS and the SA Report) were published for public consultation in 2013. Representations made during the consultation have informed any further alterations to the plans and associated documents and the SA has been updated to reflect these. The East marine plans and associated documents have been finalised by the MMO and submitted to the Secretary of State for adoption. As part of this submission, the MMO have provided a recommendation as to whether the plans should be subject to an 'Independent Investigation' (II), with the SA providing an information resource. The Secretary of State will then decide on whether an II is needed or not. At this point, if an II is not deemed necessary, then the Secretary of State will adopt the plans. If an II is needed, the II would then look to address any unresolved issues. Once resolved, the plans could then be adopted. At the point of plan adoption a 'SA Statement' will be published, explaining the 'residual effects' of the plans, and also the measures that will be taken to monitor these effects.

### 6.2 Monitoring

The final stage of the SA process is to monitor the marine plans to test how they perform against the effects predicted during the SA. Monitoring therefore helps to ensure that any undesirable sustainability effects are identified and allows remedial actions to be directed accordingly.

The monitoring framework proposed for the marine plans in the SA Report consists of a number of indicators that have been developed to record potentially significant sustainability effects related to each of the SA topics. It is intended that a review of monitoring for each indicator will be undertaken in line with the wider programme for monitoring of the marine plans and other initiatives. Monitoring will make use of data collected for existing programmes wherever possible for example, the MSFD.

The monitoring framework is presented in the section 5 of this report.