

Title: The Marine Planning System Lead department or agency: Department for Environment, Food and Rural Affairs Other departments or agencies:	Impact Assessment (IA)
	IA No: Defra 1010
	Date: 21/02/2011
	Stage: Final
	Source of intervention: Domestic
	Type of measure: Guidance
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Summary: Intervention and Options

What is the problem under consideration? Why is government intervention necessary?

Our seas are subject to competing demands, pollution and other damage, and yet the ecosystem services they provide are invaluable (e.g. regulation of climate change, flood risk and water quality and cultural services such as recreation). The current system for management is ad hoc, inconsistent, incoherent and fails to fully consider the cumulative impact the decisions we take have on the environment. It is also considered to be a burden to both regulators and industry acting as a barrier to economic growth. Only government has the powers to change this existing system to make it more integrated, forward looking, transparent and evidence based.

What are the policy objectives and the intended effects?

The overall policy objective is to contribute to the achievement of sustainable development in the marine area by enabling more strategic management of marine activities, achieving integration of different objectives, managing conflicts and complementarities and taking account of how ecosystems function. The intended effect is to work towards the vision of clean, healthy, safe, productive and biologically diverse oceans and seas.

What policy options have been considered, including any alternatives to regulation? Please justify preferred option (further details in Evidence Base)

Several public consultations since the Marine Stewardship Report in 2002 have sought views on marine planning and the approach to it. These culminated in the provisions for marine planning in the Marine and Coastal Access Act 2009. Subsequently a further consultation was carried out seeking views on the practical arrangements for giving effect to those provisions to help guide the MMO in preparing Marine Plans. This IA does not assess any substantive new decision but represents a fuller assessment on the basis of a more detailed understanding of how marine planning will work than was possible when the Act was passed. Nevertheless it is necessarily based on some very general assumptions and more defined assessments will be possible when individual Marine Plans are developed.

Will the policy be reviewed? It will be reviewed. **If applicable, set review date:** 11/2013

What is the basis for this review? Duty to review. **If applicable, set sunset clause date:** Not applicable

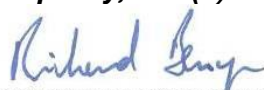
Are there arrangements in place that will allow a systematic collection of monitoring information for future policy review?

Yes

Ministerial Sign-off For final proposal stage Impact Assessments:

I have read the Impact Assessment and I am satisfied that (a) it represents a fair and reasonable view of the expected costs, benefits and impact of the policy, and (b) the benefits justify the costs.

Signed by the responsible Minister:



Date: 01 March 2011

Summary: Analysis and Evidence

Policy Option 1

Description:

Price Base Year 2010	PV Base Year 2010	Time Period Years 20	Net Benefit (Present Value (PV)) (£m)		
			Low: - 30.3	High: 9,854	Best Estimate: 446

COSTS (£m)	Total Transition (Constant Price)	Years	Average Annual (excl. Transition) (Constant Price)	Total Cost (Present Value)
Low	25.4	10	0.8	30.3
High	39.8		1.2	47.0
Best Estimate	34.0		1.0	40.3

Description and scale of key monetised costs by 'main affected groups'

Costs to MMO: initially for preparing plans and funding Sustainability Appraisal; and on an ongoing basis for reviewing and amending plans. Costs to Defra: independent investigation of plans. Costs to Industry, Local Authorities and Primary Consultees of providing input to plan preparation and amending plans on an ongoing basis. Training costs to MMO, industry and Local Authorities.

Other key non-monetised costs by 'main affected groups'

As indicated below, while marine planning is expected to contribute to improvements in the health of marine ecosystems overall compared to the do nothing option, there may be individual circumstances where increased economic activity from marine planning will bring increased environmental costs. However, this would only take place where compatible with sustainable development and within the safeguards of the requirements of existing legislation.

BENEFITS (£m)	Total Transition (Constant Price)	Years	Average Annual (excl. Transition) (Constant Price)	Total Benefit (Present Value)
Low	0	N/A	0	0
High	0		1004	9,901
Best Estimate	0		46.8	487

Description and scale of key monetised benefits by 'main affected groups'

These comprise the economic benefits to business sectors. They include: reduced activity costs (aquaculture (by 10%) and renewables (0.5%)), reduced support costs (aggregates (10%), aquaculture (10%) and renewables (3%)), an increase in the overall level of activity (aquaculture (0.5%), coastal tourism (0.5%), navigational dredging (0.1%), marine leisure (0.5%) and renewables (0.15%)), and acceleration of activities (navigational dredging (0.25%), marine leisure (1%) and ports (0.5%)).

Other key non-monetised benefits by 'main affected groups'

Marine Plans will help ensure that marine activities are shaped by better information, for example about how ecosystems function, in-combination effects and environmental limits. This will reduce damaging effects from marine activity. This will benefit those parts of the marine economy that depend on healthy ecosystems (e.g. fishermen and the marine leisure sector) and wider society. Marine Plans will also take account of coastal communities and economics which should benefit relevant communities.

Key assumptions/sensitivities/risks

Discount rate (%) 3.5

This assessment is made before any individual Marine Plans have been developed and therefore needs to make a number of high level assumptions about the scale of impact marine planning will have. Given the uncertainty, the assumptions to inform the central estimate are very cautious.

There are also assumptions about the number of organisations that participate in consultations in developing Marine Plans and the time they take.

A section on risks incorporates the risks perceived and communicated by stakeholders: for example the potential to create uncertainty if the process of development of Marine Plans is not clearly communicated.

Direct impact on business (Equivalent Annual) £m):			In scope of OIOO?	Measure qualifies as
Costs: See evidence	Benefits: See evidence	Net: See evidence	Yes	OUT

Enforcement, Implementation and Wider Impacts

What is the geographic coverage of the policy/option?		England			
From what date will the policy be implemented?		01/04/2011			
Which organisation(s) will enforce the policy?		MMO and other authorities			
What is the annual change in enforcement cost (£m)?		N/A			
Does enforcement comply with Hampton principles?		Yes			
Does implementation go beyond minimum EU requirements?		N/A			
What is the CO ₂ equivalent change in greenhouse gas emissions? (Million tonnes CO ₂ equivalent)		Traded: -0.39		Non-traded: 0.05	
Does the proposal have an impact on competition?		No			
What proportion (%) of Total PV costs/benefits is directly attributable to primary legislation, if applicable?		Costs: 100%		Benefits: 100%	
Distribution of annual cost (%) by organisation size (excl. Transition) (Constant Price)	Micro 0%	< 20 0%	Small 33%	Medium 33%	Large 33%
Are any of these organisations exempt?	No	No	No	No	No

Specific Impact Tests: Checklist

Set out in the table below where information on any SITs undertaken as part of the analysis of the policy options can be found in the evidence base. For guidance on how to complete each test, double-click on the link for the guidance provided by the relevant department.

Please note this checklist is not intended to list each and every statutory consideration that departments should take into account when deciding which policy option to follow. It is the responsibility of departments to make sure that their duties are complied with.

Does your policy option/proposal have an impact on...?	Impact	Page ref within IA
Statutory equality duties¹ Statutory Equality Duties Impact Test guidance	No	29
Economic impacts		
Competition Competition Assessment Impact Test guidance	No	29
Small firms Small Firms Impact Test guidance	Yes	29
Environmental impacts		
Greenhouse gas assessment Greenhouse Gas Assessment Impact Test guidance	Yes	29
Wider environmental issues Wider Environmental Issues Impact Test guidance	Yes	30
Social impacts		
Health and well-being Health and Well-being Impact Test guidance	No	30
Human rights Human Rights Impact Test guidance	No	30
Justice system Justice Impact Test guidance	No	31
Rural proofing Rural Proofing Impact Test guidance	No	30
Sustainable development Sustainable Development Impact Test guidance	Yes	30

¹ Public bodies including Whitehall departments are required to consider the impact of their policies and measures on race, disability and gender. It is intended to extend this consideration requirement under the Equality Act 2010 to cover age, sexual orientation, religion or belief and gender reassignment from April 2011 (to Great Britain only). The Toolkit provides advice on statutory equality duties for public authorities with a remit in Northern Ireland.

Evidence Base (for summary sheets) – Notes

Use this space to set out the relevant references, evidence, analysis and detailed narrative from which you have generated your policy options or proposal. Please fill in **References** section.

References

Include the links to relevant legislation and publications, such as public impact assessments of earlier stages (e.g. Consultation, Final, Enactment) and those of the matching IN or OUTs measures.

No.	Legislation or publication
1	http://www.defra.gov.uk/corporate/consult/marine-planning/index.htm
2	http://www.defra.gov.uk/environment/marine/legislation/strategy.htm
3	http://www.defra.gov.uk/environment/marine/legislation/mcaa/index.htm
4	http://www.defra.gov.uk/environment/marine/legislation/planning.htm
5	

+ Add another row

Evidence Base

Ensure that the information in this section provides clear evidence of the information provided in the summary pages of this form (recommended maximum of 30 pages). Complete the **Annual profile of monetised costs and benefits** (transition and recurring) below over the life of the preferred policy (use the spreadsheet attached if the period is longer than 10 years).

The spreadsheet also contains an emission changes table that you will need to fill in if your measure has an impact on greenhouse gas emissions.

Annual profile of monetised costs and benefits* - (£m) constant prices

	Y ₀	Y ₁	Y ₂	Y ₃	Y ₄	Y ₅	Y ₆	Y ₇	Y ₈	Y ₉
Transition costs	4.0	3.5	3.1	3.5	3.1	3.5	3.1	3.5	3.1	3.5
Annual recurring cost	0.0	0.0	0.0	0.1	0.1	0.1	0.7	0.9	0.8	1.0
Total annual costs	4.0	3.5	3.1	3.6	3.2	3.6	3.9	4.4	3.9	4.5
Transition benefits	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Annual recurring benefits	0.0	0.0	0.0	3.1	4.0	8.4	10.4	16.5	20.3	28.4
Total annual benefits	0.0	0.0	0.0	3.1	4.0	8.4	10.4	16.5	20.3	28.4

* For non-monetised benefits please see summary pages and main evidence base section

Evidence Base (for summary sheets)

Introduction

- 1.1 The Marine and Coastal Access Act 2009 (hereafter MCA Act) introduces provisions for a system of spatial planning for the marine area in the UK. The intention is that the new Marine Management Organisation (hereafter MMO) which was vested on 1 April 2010 will develop Marine Plans for each of the proposed eleven marine areas in England, normally two at a time, over a period of about ten years. Separate marine plan authorities are developing parallel systems of marine planning in Scotland, Wales and Northern Ireland. A UK-wide Marine Policy Statement will set the policy framework to govern how Marine Plans should be approached and how they should contribute to the achievement of sustainable development in the UK marine area.
- 1.2 This Impact Assessment (IA) assesses the impact of the marine planning system compared with a situation where such a system is not introduced. The assessment has been developed in several stages. An assessment of the marine planning system was included in the IA for the MCA Act in 2009. At that stage the detailed arrangements for how planning would work had not been expressed and therefore a more developed IA was completed to accompany the public consultation which sought views on the practical arrangements for giving effect to the marine planning system carried out in July 2010. Since that consultation was launched further analysis has been undertaken in collaboration with affected sectors and groups. Information provided by consultees has also been taken into account to refine the assessment.
- 1.3 The current assessment remains at a relatively high level, necessarily based on general assumptions about how marine planning will affect marine management. This is because the specific changes will not be known until Marine Plans are prepared. Further Impact Assessments will be carried out on individual Marine Plans.

Problem under consideration

- 1.4 Increasingly there are competing and conflicting demands for UK marine space and resources e.g. from renewable energy, aggregate extraction or fisheries. Overall this increases pressure on marine ecosystems resulting in a decline in the socio-economic value derived from them. Decisions on individual activities are, to varying degrees, taken independently making it challenging to avoid and manage conflicts and to take account of the way ecosystems function. It also makes it harder to achieve consistency and predictability of decision-making. This problem is documented in a series of reviews and reports dating from the Marine Stewardship Report in 2002.

Rationale for intervention

- 1.5 The market is not able to deliver the best solution alone for example because the existing structures do not easily permit licensing authorities and other decision-makers to take account of externalities imposed by different marine uses on each other and because information available is often inadequate. A wide range of potential approaches to address this problem has been consulted on in several public consultations since 2002. Through this process it was concluded that government intervention is necessary to introduce a more integrated forward looking policy and evidence driven approach.

The options

- 1.6 Two options are considered:

- **The do nothing option** which outlines the impact of continuing without marine planning
- **The option to introduce marine planning**

A later section starting at paragraph 1.67 covers the other options that were considered earlier in the process.

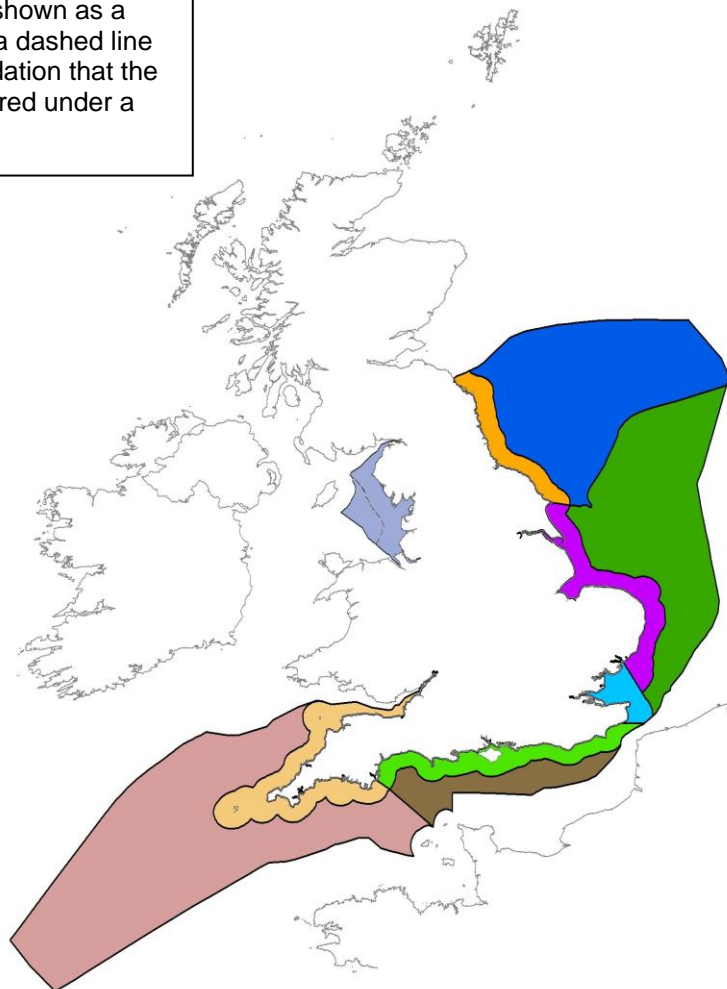
The ‘do nothing’ option

1.7 The do nothing option is the option of continuing without marine planning. This is presented to provide information about the baseline against which the assessment of the marine planning system is made. It is also included so that consideration can be given to whether introducing marine planning is genuinely better than not doing so.

The option to introduce marine planning

1.8 This option involves introducing the marine planning system and the marine policy statement in England¹. The MMO will develop Marine Plans for each of eleven English marine plan areas (shown on the map below²).

The North West area is shown as a single colour divided by a dashed line to reflect the recommendation that the two Plans here be prepared under a single process.



¹ See the section on interactions with other MCA Act measures.

² The 11 plan areas have been recommended to the MMO who will consider boundaries as they develop Marine Plans. The MMO announced the first Marine Plan areas on 28 October 2010 which are the sea areas off the coast between Flamborough Head in East Riding of Yorkshire to Felixstowe in Suffolk (known formally as East Inshore and East Offshore).

- 1.9 A Marine Plan will determine how individual decisions should be taken in the area giving effect to the UK Marine Policy Statement and in accordance with an overall vision for the area. Plans will incorporate environmental, social and economic objectives and take account of interactions between different uses of marine space. Marine Plans will be developed, two every two years, from 2011 over a period of approximately ten years. During the transitional period until Marine Plans are in place, planning, licensing and enforcement activities should be taken in the context of the Marine Policy Statement and other relevant and emerging policy documents.
- 1.10 Marine Plans will consist of: a strategy document setting out policies and objectives linked to each policy; a Policy Map which is the spatial expression of the Strategy Document; and a Delivery Framework setting out arrangements for monitoring and implementation of the plan. Marine Plans are expected to include:
- mapping information on environmental, ecological and oceanographic conditions and human activities;
 - information about current conflicts and complementarities;
 - definition of the vision for the area;
 - projections of current trends;
 - identification of new demands and requirements for marine space
 - possible alternative future scenarios
 - identification of preferred areas
- 1.11 Key steps to developing the Plan include:
- develop a Statement of Public Participation
 - undertake a Sustainability Appraisal of the Plan
 - develop the draft vision, policies, objectives, indicators and implementation arrangements have been agreed with all interested parties
 - draft the Marine Plan documents (outlined above)
 - undertake a Public Consultation on the Marine Plan documents, including the Sustainability Appraisal
 - subject the Marine Plan to independent investigation, if required
 - adopt, publish and implement the Plan
- 1.12 A central component of the MMO's work on marine planning will also be to maintain and improve a shared evidence base with information at both national and plan level.
- 1.13 Marine Plans will be monitored on an ongoing basis. The MCA Act provides that, on the basis of the data generated, there should be a report on each Marine Plan at least every three years. After publishing the report a decision must be made whether to replace or amend the Marine Plan. This IA assumes that Marine Plans will be amended every six years on the basis that over that timeframe there are likely to be sufficient changes to make it worthwhile to do so. More widely the Act itself has to be reviewed after three years for those matters that can be reviewed within that timescale and a longer timescale where they cannot be. This IA assumes that a likely outcome of that review is a decision to review the whole system of marine planning once all Marine Plans are in place.

Expected impacts of marine planning

- 1.14 In broad terms, there are impacts associated with:

- **Administering the marine planning system.** These include:
 - Costs to various organisations involved
- **Taking decisions and managing marine activities in accordance with Marine Plans.** These include:
 - Economic effects
 - Environmental effects (from changes in patterns of marine activity)
 - Social effects (particularly for coastal communities deriving from changes in patterns of marine activity)

Administering the marine planning system

1.15 Developing and maintaining Marine Plans will require the involvement of, and therefore costs to, various organisations. MMO are responsible for developing and overseeing Marine Plans in England but they need to be agreed by the Secretary of State. A number of other organisations will be involved in contributing to the development of Marine Plans and responding to consultations. That will include industry, Local Authorities and a number of other organisations or individuals which may be interested such as the Environment Agency, Natural England, the Joint Nature Conservation Committee, the Centre for Environment, Fisheries and Aquaculture Science, English Heritage, the Maritime and Coastguard Agency, the Crown Estate and Inshore Fisheries and Conservation Authorities, Defra and Other Government Departments. The costs are divided into:

- **Transition costs** – the costs of putting the system in place in the first place - which include the costs of the Sustainability Appraisal, the various costs associated with preparing and consulting on Marine Plans and the costs of any independent investigation.
- **Ongoing costs** – the costs of maintaining the marine planning system - which are the costs associated with reviewing and amending Marine Plans. The costs include the costs of revising Sustainability Appraisals, the costs of reviewing and amending the Marine Plans themselves and any independent investigations on revisions to plans.

Decisions and management in accordance with Marine Plans

1.16 Available evidence suggests that there is going to be increasing pressure on our marine environment from economic activities and the effects of climate change. The basic goal of marine planning is to promote sustainable development in the marine environment through improved decision making. This will involve helping to enable proactive management through taking account of current and future demands for sea space and their environmental and socio-economic implications on the basis of more co-ordinated information. Currently there is no overall planning system to guide decision-making: decisions are consent-led without strategic future proofed management. Marine regulators, industry and interested parties have limited information, for example, about other current and planned activities or cumulative effects of current activities. It means marine licensing authorities – mainly the MMO - are limited in the extent to which the interactions over time between different activities can be considered and how those activities can best be located in relation to each other. Marine Plans improve that situation by providing:

- A strategic vision of what should be achieved in each Marine Plan area over a twenty year period set out in both the Strategy Document and the Policy Map.

- An improved and open source evidence base at national and local levels about current and future activities in each area and on conflicts and complementarities between them
- Similarly, improved evidence about the environmental and other physical features and conditions within Marine Plan areas and about environmental limits
- On the basis of the above improved capacity to consider how combinations of activities can remain within limits
- Ability to plan marine uses and their interactions spatially over relevant timescales
- Identification of preferred areas on the basis of improved understanding about the factors determining optimal locations for activities – including conflicts and complementarities between activities;
- Cohesion between terrestrial and marine planning leading to improved prospects for integrated and sustainable management in the coastal zone
- More rationalised consultation of relevant groups helping ensure transparency and collaboration

1.17 The marine planning system does not itself amend the regimes under which marine activities are licensed but provides a more rational, consistent, transparent and evidenced based basis to guide decisions under those regimes. This is expected to lead to the effects outlined in the following paragraphs.

Economic effects

1.18 These include:

- **Changes in support costs.** Greater accessibility of information about the marine context is likely, in some cases, to reduce the costs that individual applicants face. This could include reduced search costs and costs of environmental assessments; it could also include reduced legal costs, for example, because it is clearer what activities will be allowed where, and consultation will have taken place during Plan development.
- **Changes in the costs of undertaking activities.** Taking decisions in accordance with Marine Plans might mean that activities are undertaken in partly or wholly different locations or in a different way, for example on the basis of better understanding of interactions with marine ecosystems or with other activities. This could either increase or reduce the costs of undertaking activities.
- **Changes in when activities take place.** Better information and clearer signalling about what activities are preferred where might accelerate when activities take place.
- **Changes in the overall level of activities.** The existence of Marine Plans should send clearer long-term signals about the policy framework for marine decisions enhancing investment certainty which would tend to increase the level of marine activity overall. Better information about where particular activities can best be located taking account of conflicts and complementarities between activities and social and environmental impacts could, in some cases, lead to increase the level of activity feasible within Marine Plan areas. This is not only because more activity could be physically possible within constrained space but also because a higher level of activity could be deemed acceptable in environmental and social terms through the licensing process.

Environmental effects.

1.19 Sustainable development is the central principle of the Marine Policy Statement which determines how Marine Plans are developed. The concept of sustainable development is interpreted in this context through five High Level Marine Objectives, which 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.

1.20 These objectives will guide the way planning shapes marine activities and how they interact with the marine environment³. In practical terms, it is intended that this should lead to:

- location of activities in areas where they have least damage on ecosystem goods and services;
- better informed conditions on activities, for example allowing appropriate recovery timescales, leading to better safeguarding of ecosystem goods and services;
- greater protection within plan areas of the more sensitive features and productive aspects of ecosystems;
- less risk from in-combination and cumulative effects on marine ecosystems in the context of ecosystem limits and a changing environment;
- overall reduction of damage and reduced risk of irreversible damage and ecosystem collapse.

1.21 Overall this is expected to improve the health of ecosystems and increase the value of the goods and services that ecosystems provide to society compared to the situation that would otherwise persist, which could in many respects involve severe declines. At the same time potentially increasing the level of and accelerating marine activity would be expected, all else equal, to increase pressures on the environment. The section assessing impacts explores the overall effect on the environment.

Social effects

1.22 Social effects are a key aspect of sustainable development which is the driver for marine and terrestrial planning. Integration of the two planning systems will facilitate beneficial social effects, and engagement with coastal communities when developing Marine Plans will ensure that their needs are taken into account. The effects could include:

- Benefits to coastal communities to the extent that there is increased marine economic activity and correspondingly increased demand for the support and ancillary services in ports and nearby coastal communities. As well as demand for inputs to production and for processing facilities, this might also for example include demand for accommodation and other tourist services to the extent there are increased opportunities for marine recreation. Bearing in mind that coastal communities tend to be disadvantaged compared to other areas⁴ and to be heavily dependent on jobs from seaside tourism⁵, this is particularly beneficial in terms of reducing inequalities and deprivation.
- Potential redistribution of activity towards the more deprived coastal communities as consideration needs to be given to whether this can be achieved through the planning

³ As well as marine ecosystems this would extend to cultural assets such as wrecks and other marine archaeological features.

⁴ 26 of the 37 largest English seaside towns have a higher rate of unemployment than the national average. Source: England's seaside towns: A benchmarking study. Sheffield Hallam University. 2008

⁵ A large proportion of employment in seaside towns is from seaside tourism – e.g. 34% of all jobs in smaller seaside towns in England. Source: The seaside tourism industry in England and Wales. Sheffield Hallam University. 2010

process. This could help focus economic activity in the particularly disadvantaged coastal communities.

- Better account taken of the preferences and needs of communities affected by marine activities and the connections between marine and land economies as a result of the way that stakeholder consultation is built into the marine planning process.
- Through its participatory approach, marine planning will promote appreciation and understanding of the marine area leading to more informed management of the issues and impacts from marine activities that affect coastal communities. This could, for example, include visual and noise impacts.

Approach to IA

Staged approach

- 1.23 The impacts associated with the marine planning system have been assessed in stages to help inform decisions throughout the process of policy development. Assessments were initially undertaken as part of the wider impact assessment process for the Marine and Coastal Access Act. A version of the Impact Assessment was published in June 2009 for when the Bill was introduced to the House of Commons. This included information on the costs of administering the system and some initial qualitative information about the benefits expected from marine planning. A further Impact Assessment was published in November 2009 to accompany a consultation on the Marine Plan areas for the English Inshore and Offshore Regions. This updated the costs for producing a Marine Plan.
- 1.24 Some further work was undertaken in early 2010 to reflect greater understanding of the impacts associated with administering the planning system and to provide some initial exploratory estimates of the potential economic effects of marine planning drawing on a study assessing the economic effects of marine planning at EU level. This informed the initial IA which underwent public consultation from July to October 2010. Further work was then undertaken to gather primary information from groups affected by marine planning. This further work provided a more comprehensive quantified assessment of the economic effects of marine planning. Detailed consideration was given to whether the environmental and social impacts could be assessed quantitatively and some initial estimates were derived for the environmental impacts but it was concluded that at this stage it would not be feasible to provide meaningful estimates.
- 1.25 This IA also refines the assessment of impacts associated with administering the marine planning system on the basis of comments received through the formal consultation. The overarching conclusion was that the administrative cost assumptions for industry and other groups underestimated the costs. Cost estimates have been revised to reflect comments.
- 1.26 At the point of writing this IA there is a good deal of information and guiding principles about how marine planning should be implemented and give effect to marine policies. This is set out in the Marine Policy Statement and in guidance from Defra. However, because no Marine Plans have been developed yet, there is no actual location specific information that can be assessed to provide a concrete basis for assessment. This means that the current assessment is necessarily based on a high level view of the impact marine planning will have in terms of the impacts identified above. However it has been informed through public consultation, workshops and discussions with the MMO and representatives of the relevant sectors and other affected groups.
- 1.27 Further IAs will be required for each Marine Plan as they are developed. At that stage, assessments can be based on the contents of Marine Plans and should be able to better

reflect a more detailed understanding of the economic, environmental and social implications in each area.

Approach to assessment

- 1.28 This IA reflects comments received on the IA that formed part of the July 2010 public consultation on a Description of the Marine Planning System for England, which closed in October 2010. This version includes quantified and monetised estimates where possible and where not possible effort has been made to provide a qualitative assessment of the impacts identified in paragraphs 1.14 to 1.22. It reflects the further primary data collection and analysis referred to in paragraph 1.24. This work involved interviewing a range of relevant stakeholders including representatives from all the sectors identified in this IA as being affected by marine planning, one workshop was held with relevant public authorities and another with those representing marine industries and other interested parties.
- 1.29 In general terms, many of the input parameters for the assessment are based on empirical evidence (for example on wage rates), or are well grounded in existing experience and understanding (for example time taken to undertake common tasks, or the numbers of organisations that typically respond to public consultations). Other input parameters are much less well understood (for example the degree to which marine planning will facilitate increased activity), have no basis in experience and are necessarily based on judgement taking account of the views of those best placed to advise.
- 1.30 There is significant uncertainty at this stage on the overall scale of different effects. This is, for example, because:
- it is difficult to know what the future demands for marine space will be with or without marine planning and how these differ from the past.
 - there is limited information about the precise interactions between marine users to inform modelling
 - there is limited scientific information about the impact of marine activities on marine ecosystems
 - it is difficult to predict how marine ecosystems will change, particularly in response to climate change
 - there is little experience of marine spatial planning internationally
- 1.31 Nevertheless it is essential to understand the likely scale of benefits at least to determine whether the benefits justify the costs. The general approach in the context of this uncertainty is to take a very cautious approach to the central estimate of the scale of the beneficial effects of the planning system.
- 1.32 The judgement of those consulted depended very much on the confidence they had in the system being implemented as expected. The approach in this IA is that the system will be implemented as expected in line with the Marine Policy Statement and Defra guidance. There are safeguards in place to ensure this happens, for example that if Marine Plans are not in accordance with the Marine Policy Statement they will not be approved by the Secretary of State. The risks of the system not being implemented as expected and the consequences identified in discussion with stakeholders have been recorded in the section on risks and unintended consequences later in this IA.
- 1.33 The detailed approach to assessing the various impacts and the assumptions are covered in the next section which sets out the assessment. All prices are reported in constant 2010 prices unless otherwise stated.

Assessment of the ‘do nothing’ option

1.34 As explained at paragraph 1.7, this option is presented as a baseline against which the assessment of the marine planning system is made. For the purposes of assessment it is assumed that none of the other MCA Act measures are included in the do nothing option. See the section on ‘interactions with other MCA Act measures’.

Marine decision-making and management without marine planning

1.35 The existing set of arrangements for marine decision-making and management would remain in place and decisions would be based on policies as articulated across the relevant policy documents. The MMO already has an important role in marine management, for example in fisheries management and the licensing and enforcement of a number of other marine sectors. It is assumed that this role would persist under the do nothing option. Other groups with an interest in the management of the marine environment (marine operators and their representatives, public bodies, local authorities and others) would continue to play their parts in marine decision-making reacting to individual licensing applications.

The marine economy without marine planning

1.36 In order to understand the economic effect of the marine planning system it is important first to develop an assessment of how the marine economy would develop in the absence of marine planning. This has been estimated by examining data from the past seven years where available and discussing with sector representatives whether growth rates achieved over recent years can be expected to continue into the future or whether an alternative growth rate should be used. A summary of the estimates of the gross value added (GVA) contributed by each sector is at table B overleaf. The second column shows an estimate of the GVA in 2009 based on actual data and columns 4 onwards are projections. The primary data available was largely based on turnover and adjustments have been made using data from the Office of National Statistics’ Annual Business Survey⁶ which has information by sector about turnover and GVA. The estimates show GVA in 2009 of £26.5bn growing to £95.9bn by 2030. In 2008 the Crown Estate estimated that direct marine-related activities comprised 4.2% of total UK Gross Domestic Product and accounted for 890,000 jobs, 2.9% of the UK total⁷.

⁶ <http://www.statistics.gov.uk/abs/>

⁷ The Crown Estate 2008- based on figures for 2005/6.

Table B: Predicted Gross Value Added for marine sectors in England in constant 2010 prices, £m

	2009	growth p.a. ¹	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021		2030
Aggregates	66	5%	69	73	76	80	84	88	93	97	102	107	113	118		183
Aquaculture	77	3%	19	20	21	21	22	23	23	24	25	25	26	27		35
CCS	0	varies	1,117	1,139	1,161	1,183	1,206	1,229	1,253	1,277	1,302	1,327	1,352	1,497		3,734
<i>growth rate</i> ²			1.9%	1.9%	1.9%	1.9%	1.9%	1.9%	1.9%	1.9%	1.9%	1.9%	1.9%	10.7%		10.7%
Coastal Tourism and Recreation	3,600	1%	3,635	3,670	3,705	3,740	3,776	3,813	3,849	3,886	3,924	3,962	4,000	4,038		4,401
Dredging	66	1%	67	68	68	69	70	70	71	72	73	73	74	75		82
Fisheries	77	0.3%	78	78	78	78	78	79	79	79	79	79	80	80		82
Marine Leisure	1,467	4%	1,532	1,601	1,672	1,747	1,825	1,907	1,992	2,081	2,174	2,271	2,372	2,478		3,673
Oil and Gas Exploration	10,781	-8%	9,914	9,116	8,383	7,709	7,089	6,518	5,994	5,512	5,068	4,661	4,286	3,941		1,853
Port Development	5,746	2.5%	5,891	6,041	6,194	6,352	6,513	6,678	6,848	7,021	7,200	7,382	7,570	7,762		9,726
Renewables	790	varies	1,518	2,245	2,972	3,699	4,427	5,304	6,331	7,508	9,136	11,363	13,290	15,544		63,671
<i>growth rate</i> ³			92%	48%	32%	24%	20%	20%	19%	19%	22%	24%	17%	17%		17%
Shipping	2,565	5%	2,693	2,828	2,969	3,118	3,274	3,437	3,609	3,790	3,979	4,178	4,387	4,606		7,146
Telecommunications⁴	1225	0.5%	1,231	1,237	1,243	1,248	1,254	1,260	1,266	1,273	1,279	1,285	1,291	1,297		1,354
	26461		27764	28114	28542	29045	29618	30407	31408	32620	34339	36714	38841	41464		95941

¹ Varying growth rates have been used for two emerging sectors where different stages of development are expected: the Renewable and Carbon Capture and Storage sectors as explained in the footnotes below.

² The growth rates for the CCS sector are based on projections for 2010, 2020 and 2030 made in two studies (Clean Coal Industrial Strategy (DECC, 2009) and Future Value of CAT to UK Industry. AEA. 2010) which show an increase growth rate after 2020.

³ The growth rates for the Renewable sector assume that the EU target for 2020 is met by adding to offshore renewable supply by the same amount each year until 2020 and incorporating information about increases in wave and tidal power between 2015 and 2020 from a study: The next steps for marine energy. Renewable UK. March 2010. It is then assumed that the growth rate achieved in the year 2020 of 17% is maintained until 2030.

⁴ These figures are for the UK rather than for England

The marine environment without marine planning

1.37 Charting Progress 2 (Defra 2010) assesses the state of UK seas; its main conclusions include:

- Sea-surface temperatures around the UK have risen by between 0.5 and 1°C from 1870 to 2007, with much of this change having occurred since the mid-1980s. This reduces the ability of the ocean to hold oxygen and to soak up carbon dioxide (CO₂); forces certain species to adapt, move or suffer detrimental consequences; and contributes to rising sea level. There is extensive coastal erosion around parts of the UK and a decrease in intertidal area (known as 'coastal squeeze'), caused at least in part by the presence of hard coastal defences. This in turn is causing loss of land, property and coastal habitat, particularly saltmarshes and mud flats, which are also bird feeding grounds.
- Many socio-economic activities put varying degrees of pressure on the marine environment, notably damage and loss of habitat on the seabed from fishing and the presence of physical structures; pollution and other chemical changes from land and marine-based sources; introduction of invasive species from shipping and mariculture; noise from construction and operational activities; and litter from a wide range of sources. Stricter controls in a number of evolving UK, European and international policies have reduced some of these pressures since *Charting Progress* and most industries now have sustainable development strategies.
- Some habitats and species are in reasonable condition (intertidal rocky and nearshore subtidal rocky habitats) and some are improving (some waterbird communities). Others are declining as a result mainly of rising seawater temperatures and fishing (e.g. some seabed sedimentary habitats, sharks and rays and harbour seals in some areas)
- The open seas are still little affected by pollution and levels of monitored contaminants continue to fall, albeit slowly in many cases. There are some local issues (such as eutrophication in 17 small harbours and estuaries and the presence of some contaminants at high concentrations in estuaries contaminated by industrial processes of the past).

1.38 Even in the absence of marine planning, the marine environment and the way it is managed is likely to evolve in a number of ways. Potential foreseeable changes include:

- The implementation of the Marine Strategy Framework Directive which was adopted in 2008, and has been transposed into national law, requires that Member States of the EU meet Good Environmental Status by 2020.
- Some new uses of the marine environment, for example for Carbon Capture and Storage
- More economic activity largely driven by population growth
- Increase in costs for government and businesses in the decision-making process arising from increasing competition for the use of marine environment as well as increased conflict between activities
- Potential deterioration in ecosystem goods and services, for example decline of fish stocks, and in the socioeconomic value derived from them
- Climate change and other wider environmental changes affecting ecosystem functioning
- Technological changes with implications for the way marine activities are carried out
- Economic cycles affecting the level of marine activities at various stages

The social dimension without marine planning

1.39 We are all beneficiaries of the marine environment whether directly, for example as employees in the marine economy, or indirectly for example as consumers of marine-derived products. Those living in coastal communities are particularly dependent on the way the marine environment is used. Some key statistics and facts related to coastal communities are:

- Over 3m people live in coastal communities
- 210,000 people are employed in the seaside tourist sector contributing £3.6bn to the economy
- 58 individual towns each have at least 1,000 jobs in seaside tourism
- Coastal communities tend to be more disadvantaged than elsewhere (see paragraph 1.22)
- Since the late 1990s employment in the seaside tourist industry has actually increased by about one per cent a year – an overall growth of 20,000 jobs¹

Impacts of the marine planning system

Administering the marine planning system

1.40 It is expected that Marine Plans will be developed in batches over a ten year period, whereby two are done at a time over two years. It is also expected that the two Marine Plans in the North West will effectively be developed and managed under a single process; therefore, while there are eleven Marine Plans, the estimates in this section reflect the expectation that there will be ten Marine Plan processes.

Costs to the MMO and Defra

Transition costs

1.41 Setting up and developing Marine Plans² is expected to involve:

- **Undertaking Sustainability Appraisals.** This is an appraisal of the sustainability and impacts of the plan and will include the requirements of the Strategic Environmental Assessment Directive. A previous IA on Marine Plan areas estimates the cost for carrying out the assessment and producing the final report or statement to be £0.24m per Appraisal. **The total cost in constant prices is £2.4m.** This and the other totals in this section are presented in constant terms rather than as current values.
- **Undertaking Project Plan and Statement of Public Participation (SPP).** The MMO have provided an estimate of £20k for each Project Plan and £20k for each SPP on the basis mainly of the requirements for staff time and public engagement. **The total cost is £0.4m.**
- **Consulting on Marine Plans.** MMO have provided an estimate of £75k for each consultation to include staff time, specialist input and related costs. **The total cost is £0.75m.**
- **Training the MMO team.** MMO have provided an estimate of £20k per year. **The total cost over ten years is £0.20m**
- **Preparation of Marine Plans.** This is the core costs of preparing, adopting and publishing the Marine Plans including the cost of the core planning team in the MMO and the costs of input from other staff across the organisation, the costs of data and all

¹ Sheffield Hallam 2010.

² The budget has been made available to the MMO to cover these activities in line with these estimates.

the other relevant costs. MMO have estimated that these costs are £2.175m per Marine Plan. Cost estimates have been guided by information from regional organisations in England of creating Regional Spatial Strategies, as well as from the Marine Spatial Planning Pilot Project in the Irish Sea³. **The total cost is £21.75m.**

- **Costs not attributable to individual plans.** This will include developing the strategic scoping exercise, preparation and other work in marine plan areas outside the time their plans are being developed and other general capacity building. The MMO have estimated these costs will be £150k per year. **The total cost over ten years is £1.5m.**
- **Carrying out independent investigations of Marine Plans.** It is Defra who is responsible for commissioning and paying for independent investigations. The MMO will recommend to the Secretary of State whether an independent investigation is needed to cover any important or contentious elements of the plan. It is expected that the Planning Inspectorate (PINs) will undertake these independent investigations. Discussions with the PINs about what will be involved suggest that the costs might be around £100k per plan. Assuming cautiously that an independent investigation is carried out for all Marine Plans, **the total cost would be £1m.**

Ongoing costs

1.42 It is assumed that, following the review and reporting requirements in the MCA Act, Marine Plans are revised every six years; with the first revision after six years and a second after a further six years. Reviewing and amending plans on an ongoing basis is expected to involve:

- **Monitoring Marine Plans.** Ongoing annual monitoring of Marine Plans is likely to involve collating existing data from elsewhere rather than collecting primary data. However, it cannot yet be determined what monitoring data will be collected and what resource input this will involve; this will become clearer as marine planning is implemented alongside wider changes such as implementation of the Marine Strategy Framework Directive. MMO have made an initial estimate of potential costs of £75k for 2013 – 15, £100k for 2015 – 17, £125k for 2017 – 19, and £150k for 2019 onwards. **The total cost would be £2.25m.**
- **Reviewing Sustainability Appraisals.** Reviewing Appraisals for amendments to plans is likely to involve investigating only those aspects of the plan that have changed. MMO have assumed that this will cost 20% of the original costs (£48k per plan). Given the assumption that plans will be amended twenty times during the assessment period, **the total cost would be £0.96m.**
- **Review and amendment of Marine Plans.** Amending plans involves adjusting those components of a plan that require it and does not mean replacing the plan entirely. For now MMO have assumed that the cost will be 20% of the cost of the original plan – (£568k per plan). **The total cost would therefore be £11.36m.**
- **National review of Marine Plans.** In addition to monitoring, reviewing and amending individual plans some form of overview review may be undertaken to take stock of progress once all plans are in place. A preliminary estimate is made that this might cost £200k over a two year period. **The total cost would be £200k.**
- **Independent investigations.** As for Sustainability Appraisals, MMO have assumed that these will cost 20% of the original costs and so for twenty amendments **would cost £0.4m.**

³ <http://www.abpmer.net/mspp/>

Costs to industry

Transition costs

1.43 During the Marine Plan development stage it is envisaged that industry will:

- **Contribute to and respond to public consultations on draft Marine Plans.** Some initial estimates of the costs of responding to consultations on Marine Plans were included in the IA that was consulted on in July 2010. A number of responses to that consultation suggested that the costs would be higher and that the estimates needed to take account of those stakeholders who attend workshops to contribute to drafts. The estimates have therefore been revised. It is now assumed that there will be 100 responses to each consultation (rather than 75). This represents a third of the 300 businesses with marine licences (rather than a quarter). It is also assumed that it will take businesses an average of ten days to make these contributions and respond (including on draft plans and Sustainability Appraisals and, if relevant, following independent investigation), rather than the 3 days assumed in the draft IA. There was also a view that the day rate of £322 per day used for the cost estimates was too low, but this is maintained as the industry average. **The total cost would be £3.2m.**
- **Familiarise themselves with plans.** Before responding to consultations it is assumed that each respondent will need to spend five days familiarising themselves with each set of two plans. The calculation is 5 days x 5 sets of plans x £322 x 100 businesses. This reflects comments on the IA during consultation (previously it was assumed that half a day would be spent per plan and that this would apply to 75 rather than 100 businesses). **This would cost £0.68m in total.**

Ongoing costs

1.44 Some businesses will respond to public consultations on revisions to plans. It is assumed that in total it would take five days to respond for each set of plans. The calculation is 5 days x 10 amendments x £322 x 100 businesses (previously it was assumed that 2 days would be spent for each plan). **This would cost £1.6m in total.**

Costs to local authorities

1.45 There are 129 local authorities which border the coast and are therefore likely to benefit from engagement in the development of Marine Plans. It is important to note that the decision to allocate time, funding and resources to marine planning is a decision for each local authority. Discussions with local authority representatives revealed that as the marine planning process has not yet begun authorities have not yet worked out how they will structure their input and the appropriate level of resourcing. They emphasised that the approaches taken and appropriate level of input will vary significantly between local authorities, that engagement with marine planning is likely to be integrated within officers' existing responsibilities and that there are likely to be opportunities for taking smart approaches, for example effective joint working between local authorities within marine plan areas. The IA specialists have provided some initial estimates of the potential time local authorities could take. However, there will soon be more experience from those authorities feeding in to the first two Marine Plans.

Transition costs

1.46 There are likely to be costs associated with the following:

- **Providing input to the development of drafts of Marine Plans.** This will include a range of actions such as attending workshops, providing information and advice to inform the content of Marine Plans and facilitating the involvement of local coastal partnerships. It is assumed that each of the 129 local authorities will spend an average of ten days. This is based on the IA specialists' previous experience, discussions with local authority representatives and takes account of comments on the IA received from the consultation. This time is profiled evenly over the ten year period over which Marine Plans are developed so that an average of 13 local authorities are involved in any single year. The cost is based on a cost per day of £180 (see annex 2). **This would cost £0.23m in total.**
- **Responding to consultations on Marine Plans.** Through the same process as above, it is assumed that each of the 129 local authorities will spend an average of 12 days to respond to consultations on Marine Plans (including on draft, plans and Sustainability Appraisals and, if relevant, following independent investigation). **This would cost £0.28m in total.**
- **Training and familiarisation with marine planning.** A recent report⁴ concluded that most relevant local authorities do not currently have the skills to deal with marine planning. Taking account of discussions with local authority representatives, the IA specialists assume that each local authority might invest 30 days to find out about the marine planning process and individual Marine Plans and to develop the capacity to engage in the process. This might, for example, be made up through four officers spending 5 days to gain a detailed understanding and other officers gaining a higher level understanding. Local Authority representatives pointed to the existing fora and networks for information exchange amongst coastal local authorities and considered that these might provide an efficient means of learning about the new system. For 129 local authorities and assuming a cost of £180 per day, **the total cost would be £0.70m.**

Ongoing costs

1.47 Contributing to the review of Marine Plans. On the basis that a lower level of input will be appropriate at this stage it is assumed that each local authority provides two days input to each round of reviews, and that each plan is reviewed an average of twice. **The total costs would be £0.1m.**

Costs to other public bodies

1.48 This covers the bodies mentioned in paragraph 1.15 and includes devolved administrations. Considering those mentioned and allowing that other bodies may be interested, the assessment below assumes that 25 bodies actively participate in supporting the marine planning process.

Transition costs:

1.49 There are likely to be costs associated with the following:

- **Providing input to the development of drafts of Marine Plans.** This will include actions such as attending workshops and providing information and advice to inform the content of Marine Plans. It is assumed that each of the 25 bodies will spend an average of five days providing information and advice to inform the content of each Marine Plan. This is assuming that this number of national bodies will provide input to each of the Marine Plans but at a lower level per plan than local authorities. The cost is based on a cost per day of £231 (see annex 2). **This would cost £0.29m in total.**

⁴ An Assessment of Local Authority Capacity to Implement Relevant Areas of the Marine and Coastal Access Act. Atkins. 2010.

- **Responding to consultations on Marine Plans.** It is assumed that each of the 25 bodies will spend an average of six days to respond to consultations on Marine Plans, again this is on the basis that national bodies will be interested in all plans but will tend to need to spend less time per plan than the local authorities. **This would cost £0.35m in total.**
- **Training and familiarisation with marine planning.** It is assumed that each of the 25 bodies spend 30 days on the basis that they will invest a similar level of resources as local authorities. **The total cost would be £0.14m.**

Ongoing costs:

1.50 **Contributing to the review of Marine Plans.** On the basis that a lower level of input will be required at this stage it is assumed that each of the 25 bodies provides 2 days input to each review and that there are 20 reviews. **The total costs would be £0.1m.**

Summary of costs

1.51 Table C below summarises the central estimates for the costs associated with administering the marine planning system for the groups who incur them. In line with the figures reported on page 2 of the IA, it shows the transition and ongoing costs in constant prices and a present value of costs for each group (discounted to 2010 terms). It also illustrates potential low and high estimates⁵.

Table C: Costs of administering the marine planning system, £m

	Transition (in constant prices)	Ongoing (in constant prices)	Total (Present Value)
MMO/Defra	L:22.4 C: 28.0 H:30.8	L:12.1 C: 16.2 H:16.7	L:27.1 C: 33.9 H:37.3
Industry	L: 2.0 C: 4.0 H: 6.0	L: 0.8 C: 1.6 H: 3.2	L: 2.2 C: 4.5 H: 6.7
Local Authorities	L: 0.6 C: 1.2 H: 1.8	L: 0.0 C: 0.1 H:0.1	L: 0.6 C: 1.2 H: 1.8
Other public bodies	L: 0.4 C: 0.8 H: 1.2	L: 0.1 C: 0.2 H: 0.3	L: 0.4 C: 0.8 H: 1.2
Totals	L: 25.4 C: 34.0 H: 39.8	L: 13.0 C: 17.1 H: 20.3	L: 30.3 C: 40.3 H: 47.0

⁵ For MMO/Defra, the low estimates are 20% lower than the central estimates and the high estimates are 10% higher. This is on the basis that the sums presented for MMO have been made available through the Spending Review. Nevertheless there is potential for MMO to make savings against that baseline, and some of the activities outlined may not be fully necessary: for example independent investigations may not always take place. While it is very unlikely that more funding will be available than that the MMO could reallocate funds in favour of marine planning if it turns out more resource is needed, although it would be limited in its ability to do this. The ranges for costs to other groups is wider: 50% high or lower than the central estimate is used. This would imply, for example, that the time businesses spend responding to consultations per plan would be in the range 5 days to 15 days. While this seems a reasonable range, it is not impossible that the true value could be outside the range, also given uncertainty of the numbers of organisations that engage in marine planning.

The summary sheet reports £1.0m which is the average cost once ongoing costs start to be incurred. This is in year 4 of the 20 year assessment period; therefore 17.1 is divided by 17.

Economic effects

Introduction

1.52 Paragraph 1.18 explains what economic effects are expected to result from marine planning. This section provides a high level assessment of the potential scale of these effects on the basis of further analysis undertaken during July to October 2010. Before this analysis was undertaken, the previous version of the IA included some illustrative estimates based on an EU study of the economic effects of marine spatial planning. A brief comparison is made at paragraph 1.59 between the assessment in this IA and the illustrative estimates from the EU study.

Sector specific assumptions

1.53 The starting point is to identify which of these effects will happen in each sector. This was approached through discussion with representatives of each sector. Discussions focused first on establishing how marine planning is likely to operate and then considered whether effects were relevant for each sector and why this was the case. On the basis of an understanding of how each effect arises and with detailed statistical information for each sector, the IA specialists then provided an initial view of the potential scale of these effects. These were then presented to sector representatives in a workshop setting who either agreed they were reasonable estimates or provided an alternative view, sometimes following further consultation with others in the sector. The conclusions and reasoning for each sector are set out in Annex 3. It should be noted that the assumptions on the increase in the level of activity for each sector refers to the total change assumed across the sector and does not reflect any change in the distribution of activity. So, for example, there is a central assumption that the level of coastal tourism and recreation activity will increase by 0.5%: this represents total growth even though there may be changes in where this activity takes place compared with the 'do nothing' option.

General assumptions

1.54 There is likely to be a period of 'bedding in' before these impacts fully materialise while marine economy sectors and other relevant groups familiarise themselves with plans, consider the implications for their activities and learn how best to adjust their practices. Drawing on experience from reviewing other policies such as environmental permitting and other land use policies, and in discussion with MMO, the IA specialists recommend that a fair assumption is that the impacts will materialise progressively after the adoption of plans in line with the proportions set out below:

Table D: assumed rate at which impacts of plans are experienced after adoption

1 st year	2 nd year	3 rd year	4 th year	5 th year	6 th year
50%	60%	70%	80%	90%	100%

Annex 4 sets out the percentages used for the overall marine planning system taking account of the progressive introduction of Marine Plans over a ten year period.

1.55 Enabling increased activity in the marine environment, through better spatial understanding of how activities interact with each other and the capacity of the marine environment, is one of the potential effects of marine planning. However, it is not yet clear

how significant this effect is likely to be, or over what timeframe it might happen. To derive the central assumptions a cautious approach is taken whereby it is assumed that the increases in activity identified in annex 3 represent the total increase over the assessment period and that it accrues in line with the profile set out in annex 4. An alternative view is that these increases might arise annually. A reason for thinking the latter pattern might be realistic is that many sectors are expected to achieve annual growth in activity (e.g. over 17% in the renewable sector) and that in some cases growth might be increasingly constrained in the absence of marine planning, and so marine planning effectively helps growth to be achieved year on year. This alternative view where the increase arises annually is reflected in the upper bound estimate of the range provided.

Summary of estimates

1.56 The effect of applying the assumptions in Annex 3 for each sector alongside the assumed time profile for the impacts to accrue in Annex 4 is calculated to establish the total impact for each sector and each type of change expected, summarised in tables E and F below. In addition to a central estimate, these tables include low and high estimates on the basis of low and high values reported in Annex 3 and assuming for the high estimate that the increases in activity reported are achieved annually as discussed in the preceding paragraph. Annex 5 includes the full annual profile for the central estimates by category of impact and by sector.

Table E: Economic effects by category, £m

Reduced Transaction Costs	NPV		
	Low	Central	High
Reduced activity costs	0.000	0.070	1.099
Reduced specialist support costs	0.000	0.65	0.963
Improved Investment Climate			
Increase in overall level of activity	0.0	348.7	8,758.4
Acceleration of activities	0.0	137.8	1,140.0
TOTAL	0.0	486.6	9,900.5

Table F: Economic effects by sector, £m

Sector	NPV		
	Low	Central	High
Aggregates	0.0	0.0	32.8
Aquaculture	0.0	1.1	15.1
CCS	0.0	0.0	0.0
Coastal Tourism	0.0	74.9	1,486.1
Dredging	0.0	0.5	10.2
Fisheries	0.0	0.0	19.1
Marine Leisure	0.0	122.1	1,513.5
Oil & Gas	0.0	0.0	0.0
Ports	0.0	63.4	630.5
Renewables	0.0	224.8	6,193.2
Shipping	0.0	0.0	0.0
Telecommunications	0.0	0.0	0.0
TOTAL	0.0	486.6	9,900.5

The total benefits in constant terms are £796m (the sum of the total line in annex 5). The average reported in the summary sheet divides this figure by 17 (years).

1.57 It is clear that these estimates for economic effects fall within a wide range. As mentioned in the summary sheet and introduction, this reflects the fact that while the principles

governing how marine planning will work have been articulated and there are emerging views of the nature and scale of impact this will have on different sectors, until individual plans are developed the assessment necessarily remains at high level. There are clearly also interactions between the economic effects – particularly the increase in levels of activity – and the environmental impacts of marine planning. These are discussed in more detail in the following section on environmental effects. Nevertheless, in considering where within the range the actual economic effects will be, it should be recognised that meeting the sustainable development principles set out in the Marine Policy Statement and complying with legislation (like the requirement to achieve Good Environmental Status embedded in the Marine Strategy Framework Directive) will set parameters for the level of growth achievable.

- 1.58 This assessment includes those impacts that are considered to arise as a direct consequence of marine planning, also known as ‘first-round effects’. Second-round effects are not quantified in this assessment but the following possibilities have been identified:
- Increased marine aggregates extraction (envisaged only in the high scenario) would be likely, in time, to lead to reduced land-won aggregates⁶.
 - An increase in fishing activity in England (only included in the high scenario) is likely, in time, to reduce imports.
 - Accelerated activity at ports may have knock-on effects to the wider economy. A recent study suggests there may be a multiplier effect of around 25% from port activity.⁷
 - Similarly there is evidence⁸ that offshore renewables may have a knock-on effect on the economy – a multiplier effect of around a third. Increased energy supply from offshore renewable is also likely, in time, to reduce demand for energy from terrestrial sources⁹.

None of these second-round effects would be expected to radically change the results of the assessment if included.

- 1.59 The previous version of the IA included some illustrative results based on an EU-level study¹⁰. A footnote¹¹ considers some of the main differences in approach between the EU study and the analysis undertaken for this IA. The results based on the EU study for the annual economic effects for implementing marine planning in England showed a central

⁶ Only a very small proportion of land-based aggregates are exported given that they are low value but high mass and bulk, so increased marine extraction is likely to reduce land-based extraction. This adjustment is unlikely to happen immediately but either be a response of land-based operators to a change in the market or through the terrestrial planning system in response to information of increased marine provision. A high proportion of marine-won aggregates is exported or used for beach replenishment or contract fill and these components will not displace land activity. So this displacement effect will be smaller than the first-round effect.

⁷ "The economic contribution of ports to the UK economy" Oxford Economics, March 2009

⁸ "Offshore wind, onshore jobs - a new industry for Britain", Greenpeace, October 2004

⁹ It is worth noting that while displacement from land activity in the aggregates, fishing and renewable sectors are considered second round effects in this IA, displacement from land activity in coastal tourism and marine leisure sectors are considered first-round effects. This is because for the latter sectors it is assumed that where planning increases the number of marine and coastal tourists, those tourists who are enjoying marine and coastal amenities are doing so instead of and at exactly the same time as they would otherwise have enjoyed land-based equivalents. In the other sectors there is likely to be a less direct effect where, for example the diversion from land-based activity is a response to a change in the market.

¹⁰ Study on the economic effects of Maritime Spatial Planning. DG Maritime Affairs and Fisheries, April 2010.

¹¹ The analysis for this IA and that in the EU study have some similarities and some differences. The similarities are that they both identify the main impacts as being changes in costs and changes in either the timing or level of activities. The main differences are that: this IA includes the changes in the costs of activities that are carried out in some way differently as a result of marine planning whereas the EU study does not include this category; the EU study considers the benefit of taking better account of conflict and complementarities between sectors as being a reduction in the costs of conflicts whereas the current IA considers the benefits to be facilitating increased activity overall; and that the EU study uses a common 1% reduction in costs across all sectors, the current IA assigns different values to different sectors based on discussions with those sectors.

estimate of benefits of £204m by 2020 and £350m by 2030. This compares with annual benefits in the current IA of £33m by 2020 and £111m by 2029. The differences between the two results reflect a more detailed and precise analysis for England than was possible in an EU wide analysis and a more cautious approach – in particular that in the current IA more detailed consideration is given to which sectors will be significantly affected by marine planning¹² and the estimates in this IA reflect the phased entry of marine planning.

Environmental effects

Quantification not possible

- 1.60 The IA specialists were asked to investigate the potential for deriving a monetary estimate of the environmental effects of marine planning. They developed a possible approach which started by gathering existing monetary estimates of ecosystem services and then determined a potential broad brush means of estimating what impact changes (particularly increasing the level of activities) would have on that baseline value. This involved making simplifying assumptions that increasing the level of activity would lead to a proportionate increase in the seabed area affected by that activity. Where the activity in question was considered to affect a given ecosystem service, the overall value of that service in England would reduce depending on the proportion that the area newly affected by activity represents as a percentage of the total seabed in England.
- 1.61 Following extensive investigation of the method, it was clear that this approach would not provide meaningful information. The central problem was the absence of sufficiently robust primary evidence on the value of different ecosystem services for these purposes but this was compounded by the simplifying assumptions which are unlikely to hold in reality.

Commentary on the scale of environmental effects

- 1.62 Nevertheless it is worth reviewing what conclusions can reasonably be drawn on the nature and scale of environmental effects – particularly in view of the potential for increased pressure on the environment as a result of increased economy activity. In theoretical terms this leads to an ambiguous position as follows:
- Increased activity and increased use of marine resources would be expected, all else being equal, to increase deterioration of marine ecosystems and other assets.
 - Planning marine activities spatially with improved information about environmental factors will tend to reduce the impact of marine activities through the mechanisms identified at paragraph 1.20. This applies not only to the impact associated with any additional economic activity which may result from marine planning but also, over time, to all the activity that would already have gone ahead in the absence of marine planning.
 - In theory, even if we expect a marine planning system to improve outcomes overall in net terms, it is not clear whether it necessarily leads to an improvement in both economic and environmental terms at the same time. For example, it could lead to significantly increased economic activity such that any improvement in environmental performance is offset by the impacts from the additional activity, or conversely significant environmental improvements at some economic cost.

¹² Although this is reflected to some degree in the EU study's four scenarios of conflicts between sectors.

- To illustrate, in very crude terms, a 5% increase in economic activity could increase environmental impacts by 5%¹³; at the same time better account of environmental factors reduces the environmental impacts associated with economic activity overall by 2%. The net situation would be an increase in economic activity by 5% while increasing environmental impacts by nearly 3%. In an alternative scenario, where activity increases by 1% and the environmental impacts associated with economic activity overall reduce by 2%, there is an improvement in both economic and environmental terms.¹⁴

1.63 The reality depends on the structures governing the way Marine Plans are developed and implemented. Examination of the governing documents and guidance shows that sustainable development is the principle underpinning planning such that better informed and managed interactions between activities and the environment should improve the conditions for the marine economy while reducing the overall impact on the environment. The central mechanisms to help bring this about are:

- The Marine Policy Statement and the High Level Marine Objectives set out at paragraph 1.19
- Sustainability Appraisals to ensure the full environmental effects of Marine Plans are understood.
- Impact Assessments of Marine Plans that will cover both the economic and environmental effects.
- The requirement for Marine Plans to be signed off by the Secretary of State and be subject to the government's processes for regulatory scrutiny
- European legislation that requires achievement of environmental outcomes¹⁵ in the marine environment to which marine planning is to contribute.

1.64 In very general terms, the current view is that the services and benefits from ecosystems and other environmental resources depend to a very great extent on being able to stay within certain thresholds and limits. Enabling marine decision-making and management that is informed by better understanding of where those limits are should facilitate increased productive use of marine resources at the same time as reducing the instances where thresholds and limits are breached. The scale of the environmental benefits are difficult to predict currently, however, improved capacity for monitoring environmental outcomes including for the Marine Strategy Framework Directive should help inform evaluation of the impact of marine planning.

1.65 While the driver for marine planning is sustainable development, it will not be possible always to achieve benefits for the environment, economy and society when a decision is made and sometimes difficult choices will need to be made where there are conflicts. So while there may be an overall net benefit for sustainable development from the Plan, in individual cases there may be some disbenefits. An example of this would be if there were very good economic, social and environmental (in terms of reducing CO2 emissions)

¹³ There is clearly not a linear relation between the level of marine activity and impact on the environment. This is because marine ecosystems are very unevenly distributed, so careful location of activities could reduce impacts; as can careful and well-informed management. The fact that ecosystem functioning is often subject to limits or thresholds should also be noted, such that the level of marine activity may not have much impact on ecosystem functioning up to a certain level above which ecosystem functioning may fall away very suddenly.

¹⁴ The increases in economic activity estimated in this IA are relatively modest in proportion terms. The increase used for the central estimate represents 0.05% of the value of all economic activity over the assessment period, and the high estimate represents 1.37% of all economic activity.

¹⁵ These include the Marine Strategy Framework Directive requirement to put in place measures to achieve Good Environmental Status in marine waters by 2020 and the Water Framework Directive requirements for good chemical and ecological status in inland and coastal waters by 2015 and the requirements to improve biodiversity contained within the Birds Directive and Habitats Directive.

reasons to facilitate an offshore renewable energy development but it would have a localised impact on a particular marine species.

Social effects

1.66 The potential social effects are outlined at paragraph 1.22. The scale of these effects is not yet clear, but information at paragraphs 1.22 and 1.39 provide insights into the scale of problems that marine planning could help alleviate.

Other options considered

1.67 It is government policy that alternatives to regulation should be considered before introducing regulation. It is important first to recognise that the marine planning system is not new regulation in the sense of imposing new requirements on business. Instead it provides a framework for taking a more co-ordinated, evidenced-based and rational approach to implementing existing regulations and policies. It is therefore more about improving the existing landscape rather than introducing something new¹⁶.

1.68 Consideration has been given to alternative mechanisms for achieving these ends:

- One option would be to provide a map showing which activities happen where, together with zones proposed for future activities. This map could provide information and advice on what would be suitable activities for particular areas but would not have the force of law. Those countries who have adopted this approach highlighted that its effectiveness is undermined by the fact that it can be ignored and therefore doesn't provide certainty and clarity. To overcome this, the framework for marine planning has a legislative basis and public authorities are required to take account of the Marine Policy Statement and relevant Marine Plans in making relevant decisions.
- One way of taking a more co-ordinated and evidence-based approach to decision-making in the marine area without marine planning would be to call for extra information or research and wider consultation when a licensing application was submitted. This would help to build a bigger picture, for example on cumulative effects, or other activities that may be considered in the future for that place than is currently the case. The information would have to be called for each licensing application and the stakeholders would have to be consulted on multiple occasions. These iterations would be an additional burden for all parties compared to seeking views and information for a Plan which would then lead decision-making for the life of the Plan. This option would also not be able to take a holistic and long term view over a larger area or provide certainty as it would be ad hoc, dependent on where and when applications are submitted.
- Consideration was also given to limiting the scope of marine planning in various ways. Planning could have been limited to major development activities such as oil and gas and wind energy or encompass all activities and nature designations and could have been limited, for example to coastal waters or out to 12 nautical miles. It was decided that to get the full benefit of marine planning an all-encompassing and holistic approach should be taken. By including all activities and the whole of the UK marine area in Marine Plans a full picture of the UK marine area could be developed

¹⁶ It should also be noted that the MCA Act has already introduced the powers for marine planning authorities to develop Marine Plans and that the actual decisions about whether Plans will go ahead need to be taken later and will be subject to the Government's full regulatory scrutiny provisions. The current IA does not therefore accompany a decision point but is intended to help those implementing Marine Plans with a complete view of the potential impacts of the system.

and the interactions and cumulative effects identified as the best way of ensuring the UK's vision for the marine environment for "clean, healthy, safe, productive and biologically diverse oceans and sea". The decision for Marine Plans to cover the area up to mean high water mark to overlap with the area for terrestrial plans was taken to facilitate Integrated Coastal Zone Management.

- Another option for marine planning in the English inshore and offshore regions within the legislative framework of the Act would be to have one just one plan, rather than a series of more detailed plans. The seas, mainly near the coast, are very busy and many people enjoy living by the sea. A key feature of the planning system is the emphasis on consultation. There is also a requirement to seek compatibility with terrestrial plans drawn up by public authorities that affect the marine area. Both these principles would be undermined if the scale of the Marine Plan were too large. The current proposals for 11 plan areas arose from research and the outcome of a public consultation held between November 2009-February 2010, so were well tested¹⁷.

1.69 Consideration is also given to what marine planning should be tasked with achieving. The overall goal is sustainable development and the Marine Policy Statement defines how this should be achieved. Alternative approaches to the Marine Policy Statement are considered and ruled out in the Appraisal of Sustainability.

The Marine and Coastal Access Act context

Proportion of impacts attributable to primary legislation

1.70 Provision was made in the MCA Act for a marine planning system (including a Marine Policy Statement); and the costs and benefits of that system were covered in the IA accompanying the Act¹⁸. This document is the IA on a description of the marine planning system for England developed to guide the MMO's implementation of the system. It does not introduce any new costs or benefits over and above those in the Act. However, the cost estimates in this IA have been refined on the basis of a more developed understanding of how the system will work, through thorough stakeholder consultation, and quantified information on benefits is provided for the first time.

Interactions with other MCA Act measures

1.71 Paragraph 1.8 explains that the policy option considered in this IA includes introducing both the marine planning system and the Marine Policy Statement; this is because the Marine Policy Statement is an essential and integral part of the marine planning system and the full benefits are unlikely to be achieved without it. A separate IA was needed for the Marine Policy Statement because it is a statement for the UK and this IA is to cover the English marine planning system. The current IA covers the full effects of introducing both the planning system and the Marine Policy Statement, and the UK Marine Policy Statement IA considers the effect of having a planning system with and without a Marine Policy Statement. For these reasons, the Marine Policy Statement is included as part of the option to introduce the marine planning system in this IA, rather than within the do nothing option.

¹⁷ The conclusions from the marine plan area consultation can be found at: <http://www.defra.gov.uk/corporate/consult/marine-plan/index.htm>

¹⁸ A further IA accompanying the consultation on marine plan areas within the English Inshore and English Offshore Marine Regions covered the same costs and benefits using the same numbers.

1.72 The impacts of the planning system and Marine Policy Statement are largely independent of those in the IA for the marine licensing system. This is because the focus of the marine licensing system is on improving and streamlining the administrative processes for marine licensing, rather than being concerned with the substance of what decisions are taken which is more the focus of the policy statement and planning system. There are two issues, however, that merit attention that both result from the fact that the marine planning system will make more information available for applicants and increase certainty for them:

- i) That the provision of a web portal and pre-application phase in the licensing system might reinforce the benefits of the planning system by enabling and encouraging applicants to make better use of this information and make more informed decisions about their applications. This might either increase the value derived from applications or reduce the costs of making applications. This would be a network effect and increase the total value of MCA Act measures when combined.
- ii) That the availability of better information through the planning system would already make the application process more predictable. The question then arises whether some component of the benefits of more predictable timescales assessed in the licensing IA are already achieved by the marine planning system and captured through the assessment of accelerated activity.

1.73 It should be noted that one of these would tend to increase the overall benefits and the other to decrease them. The scale of each cannot readily be assessed making it difficult to ascertain whether the net effect of combining the planning system and policy statement with the licensing system is greater or lesser than the sum of the estimates in each of the IAs.

Focus on impacts on business

One-in, one out

1.74 The IA estimates some direct costs to business associated with administering the marine planning system and some direct benefits to business in terms of reduced costs, acceleration of activities and increasing levels of activity. The qualifying benefits are expected to considerably outweigh the qualifying costs: this policy would therefore represent an out in one-in, one-out terms. The indicative numbers based on this IA are presented in the table below.

Type of impact	Estimate (in equivalent annual terms)
Business costs	£0.31m
Business benefits	£34.2m
Net position	£33.9m

1.75 However, as discussed throughout, this IA provides only an initial high level view of the economic effects of marine planning as no Marine Plans are available yet. A clearer view of the costs will be available from the IAs done for individual Marine Plans. It is therefore considered premature to put these estimates for one-in, one-out at the present time and that the estimates should be put forward as individual Marine Plan IAs are completed.

Costs by different sizes of business

1.76 The ongoing costs to businesses are estimated to be £1.6m per annum, assuming that 100 businesses respond to each consultation on revisions of plans and spend 5 days each at a cost of £322 per day. Larger businesses will have more capacity to respond to

consultations and it may be fair to assume that a higher proportion of larger businesses will therefore respond. However, there are fewer large businesses operating in the marine sectors than small or medium-sized businesses¹⁹. The very smallest businesses (micro-businesses) may not have spare capacity to respond to consultations at all. Taking these considerations into account, an initial view is that 1/3 of costs will be incurred by small businesses, 1/3 by medium-sized businesses and 1/3 by large businesses. The IAs on Marine Plans should be able to provide more accurate estimates on the basis of the numbers and types of companies who respond to consultations on plans.

Risks and unintended consequences

1.77 While generally of the view that marine planning has the potential to improve the way the environment is managed with benefits to each of them, many of those who were interviewed and provided information for the formation of this IA were of the opinion that the real impacts and their scale depends very largely on how the system is implemented. The approach to this Impact Assessment has been to assume that the marine planning system will be developed and implemented to achieve its multiple objective in a balanced way and consistent with the overall intentions as expressed in the Marine Policy Statement and guidance from Defra. The main risks were identified and are being mitigated through the way in which the marine planning system is being implemented are:

- The extended transitional phase while Marine Plans are being implemented might create uncertainty for developers and undermine the intended objectives. The associated risk is that developers might sink costs in one pattern of activities which it then turns out is not favoured under marine planning. Clarity is therefore being provided in how the system will work and when certain actions will be taken in guidance produced by the MMO and Defra.
- Fishing activities could be squeezed out by other activities which achieve higher economic returns. It is therefore important that sufficient attention to cumulative effects including any consequences of displacement, and socio-economic effects on coastal communities.
- Facilitating increased use of the marine environment might increase environmental pressures, emphasising the importance of the ecosystem based approach to marine planning which is being undertaken and the safeguard measures to ensure that plans contribute to sustainable development.
- Local authority representatives pointed to a risk that problems requiring significant resource input could arise if marine and terrestrial planning systems are not well integrated. They emphasised the importance of early and effective engagement with the marine planning system process to avoid this.

Specific Impact Tests

Statutory equality duties

Race, disability and gender equality

¹⁹ Work for this IA estimated the numbers of businesses in each size category for each of the sectors covered by the IA. This is mainly from the Office of National Statistics (2009 data) except where unavailable, such as for the Carbon Capture and Storage sector for which assumptions were made. Estimates were: 116 large businesses, 259 medium businesses, 1787 small businesses and 10912 micro-businesses. The workings are not provided in this IA as they do not directly inform the IA's core estimates.

1.78 The marine planning system does not differentiate between individuals on grounds of race, disability or gender and no indirect impact on equality has been identified.

Economic impacts

Competition Assessment

1.79 The standard competition assessment test involves considering whether the proposal directly limits the number or range of suppliers, indirectly limits the number or range of suppliers, limits the ability of suppliers to compete or reduces suppliers' incentives to compete vigorously. Introducing a system of marine planning is not expected to adversely affect competition in any of these ways. There may be some small positive effects on competition, however, to the extent that marine planning reduces the costs of applying for licenses; this might particularly be the case for SMEs for whom the cost savings will be proportionately greater.

Small Firms Impact Test

1.80 There is a relatively small increase in costs, associated with responding to consultations on Marine Plans. Given that the costs of responding to consultations is largely fixed irrespective of size of business, smaller firms are less likely to choose to respond to consultations and incur this cost. This could mean that the views of smaller companies are underrepresented. However, trade associations such as the Federation of Small Businesses and other sectoral associations provide a route for smaller companies to be represented at proportionate cost.

1.81 To the extent that smaller companies carry out activities affected by marine planning, smaller companies will share in the economic benefits covered in this assessment. There may be respects in which there will be particular benefits to smaller companies if reductions in transaction costs, such as reduced legal costs, form a greater proportion of total costs for smaller companies than for larger companies.

Environmental Impacts

Greenhouse Gas Assessment*

1.82 The IA specialists identified two types of effect on levels of carbon emissions that they could quantify: 1) increases in emissions as a result of increased economic activity 2) decreases in emissions to the extent that planning facilitates more renewable energy displacing more carbon intensive energy generation. They did not attempt to quantify any wider impacts on emissions such as any potential effect on the sea's role in CO₂ absorption that might result from marine planning.

1.83 The general approach to assess the first effect was to estimate the average CO₂ emissions per £ of economic activity and multiply that by the increase in economic activity expected from marine planning. The first table in annex 6 shows the workings. The total estimate is an additional 7k traded CO₂ tonnes and an additional 52k non-traded CO₂ tonnes. The approach to the second effect was to multiply the marginal carbon savings from renewable energy over fossil fuel energy generation (per unit of energy)²⁰ by the

²⁰ This is based on 0.4 kg/kWh from DECC/HMT: Valuation of energy use and greenhouse gas emissions for appraisal and evaluation (June 2010)

additional renewable energy generated as a result of marine planning. The total estimate is a saving of 401k of non-traded CO₂ tonnes. This gives a total of an additional 52k of non-traded CO₂ tonnes and 394k of traded CO₂ tonnes. These are estimates over the 20 year assessment period.

Adapting to climate change

- 1.84 The marine planning system provides a basis for taking account of and managing the impacts of climate change in the marine environment.

Wider environmental issues*

- 1.85 The impacts of the proposals on environmental outcomes are covered in the main narrative of this IA.

Social impacts

Health Impact Assessment*

- 1.86 It is highly unlikely that marine planning will raise any negative health issues. It is not expected to affect health and well-being, or health equalities compared to the baseline 'do nothing' option.

Human Rights

- 1.87 Marine planning is not considered to present a breach of Convention rights. A detailed assessment of the impact of the MCA Act 2009 and its provisions on human rights was undertaken through the development of the memorandum on the Act's compatibility with Convention rights which accompanied the Act (at Bill stage) upon introduction to Parliament.

Rural Proofing

- 1.88 Marine planning applies to the UK marine area and activities that take place there mainly affecting the rights of the users of the marine area and the wider public interest of protecting the marine environment. However, there is some inevitable overlap between marine and land issues which can be managed through effective integration of marine and terrestrial planning. Rural communities will benefit from increased certainty that will be generated for marine and coastal developers, and better management of marine and coastal resources.

Sustainable Development*

- 1.89 Marine planning will help the UK Government and Devolved Administrations achieve their sustainable development objectives. The MCA Act 2009 makes it clear that the UK MPS should contribute to the sustainable development of the UK marine area.

Legal Aid

- 1.90 The marine planning system provides a more coherent and transparent framework for decision-making in the marine environment. If it has any impact on the level of prosecutions and court activity it is likely to be to reduce them. However, the relevant marine operators are very unlikely to qualify for legal aid in any case.

*Sustainability Appraisals are required for each Marine Plan.

Annexes

Annex 1 should be used to set out the Post Implementation Review Plan as detailed below. Further annexes may be added where the Specific Impact Tests yield information relevant to an overall understanding of policy options.

Annex 1: Post Implementation Review (PIR) Plan

A PIR should be undertaken, usually three to five years after implementation of the policy, but exceptionally a longer period may be more appropriate. If the policy is subject to a sunset clause, the review should be carried out sufficiently early that any renewal or amendment to legislation can be enacted before the expiry date. A PIR should examine the extent to which the implemented regulations have achieved their objectives, assess their costs and benefits and identify whether they are having any unintended consequences. Please set out the PIR Plan as detailed below. If there is no plan to do a PIR please provide reasons below.

<p>Basis of the review:</p> <p>The MCA Act provides that individual Marine Plans should be monitored with a report at least every three years. It also requires a report on the status of the development of Marine Plans every six years. The Act is also subject more generally to a review after three years or later for components for which that will be too early. It seems likely that that would be the opportunity to review the overall system of marine planning as well as the Marine Policy Statement. A date of 2013 is suggested on the summary sheet as the likely date for the first review as that is when the first plans will be adopted.</p>
<p>Review objective:</p> <p>The objective of reviewing individual Marine Plans is covered in the Act: it is to evaluate the effect of policies in place, the effectiveness of plans at securing objectives and progress made towards objectives.</p>
<p>Review approach and rationale:</p> <p>Reviews of individual plans will involve reporting on routine monitoring and any issues arising. The purpose is to determine whether plans need amending. A review of the overall system of marine planning would examine more widely how plans interact, whether together they implement the Marine Policy Statement effectively and whether any changes to the system are required.</p>
<p>Baseline:</p> <p>This is described as the do nothing option in this IA.</p>
<p>Success criteria:</p> <p>Success criteria will be developed by the MMO and Defra. An important aim will be to establish whether the outcomes identified in this IA are achieved. It is likely to be challenging to separate out the effect of marine planning on outcomes, but indicators should aim to provide insights on the outcomes achieved.</p>
<p>Monitoring information arrangements:</p> <p>MMO are building on their current data collection systems to create a system to monitor Marine Plans. MMO will also rely on other marine regulators and managers to provide monitoring information. For example, Natural England and JNCC would provide monitoring information on the state of protected marine features.</p>
<p>Reasons for not planning a review:</p>

Add annexes here.

Annex 2: General assumptions

Wage rates

Rates for the relevant functions have been provided by the modellers in agreement with Defra. The MMO rates are based on staff costs and the industry rates are based on typical salaries and have been validated by industry representatives. All rates include a component to cover overheads and are adjusted to take account of the proportion of productive days (i.e. when staff are not on holiday or sick absence).

Wage rates	
Function	Daily wage rate, £s
External legal advice	800
MMO Team leader	294
MMO Senior Executive Officer	231
MMO Higher Executive Officer	200
MMO Executive Officer	195
MMO Administrative Officer	159
Local Authority Officer	180
Industry director	322
Industry senior manager	322
Industry manager	322
Industry internal professional	322
Industry technician	184
Industry clerical staff	184
Industry administrative	184
Industry trade	184
Industry other	184
Planning inspector	1000

Annex 3: Sector specific assumptions about economic effects

Aggregates:

Impact	Change	Reason and further information
Support costs	L: 0% C: -10% H: -15%	<p>Reduced costs expected at application stage as a result of increased availability of information through marine planning.</p> <p>The IA specialists have assumed that support costs might represent 25% of the total application costs on the basis of previous experience. Information from marine aggregates industry representatives suggests that development costs are roughly £0.5m-1m per development and evidence from the MMO is that an average of three licences are expected each year.</p>
Activity costs	No change	There could be cost implications if investment has already been made in investigation into particular sites and the planning system results in diversion to alternative sites. The staged implementation of Marine Plans reduces the probability that this will happen. There may also be a different pattern of costs at those alternative sites – either higher or lower.
Timing of activity	No change	Industry representatives noted that marine planning has the potential to reduce risks and increase certainty of timing which would create an improved environment for investment, strategic business planning and safeguard future resources. There is also the risk that the if system is badly implemented there is potential for reduced certainty and delays with associated costs. Overall it is cautiously assumed there will be no effect.
Level of activity	L: 0% C: 0% H: 0.5%	There is potential that taking better account of conflicts (with fishing and renewables particularly) could increase the level of activity possible in confined space although this is less likely in the shorter term as the licensed area currently far exceeds the area currently worked. Better linking with the terrestrial system might also enable some rebalancing of supply.

Aquaculture:

Impact	Change	Reason and further information
Support costs	L: 0% C: -10% H: -15%	<p>Aquaculture representatives advised they would expect a reduction in supports costs at application stage as a result of increased availability of information through marine planning.</p> <p>The same 25% assumption was used for the proportion of application costs that relate to support costs. The information from aggregates industry representatives was used for the development costs in the absence of sector specific information- the midpoint estimate used was £750k. It is assumed that there will be one new license per year.</p>
Activity costs	L: 0% C: -10% H: -15%	An assumption has also been made on the basis of discussions with aquaculture representatives that the overall application costs are reduced because of better information at application stage. The percentages are applied to the full costs so in reality it represents a higher proportion of those

		costs that are not support costs.
Timing of activity	No change	There is already a relatively clear framework
Level of activity	L: 0% C: 0.5% H: 1%	Aquaculture representatives assumed that the sector will grow as result of more information being made available to developers.

Carbon Capture and Storage:

Impact	Change	Reason and further information
Support costs	No change	The IA specialists assumed that marine planning was unlikely to make a significant difference to CCS developments on the basis that potential locations are highly constrained and a degree of planning would already have taken place in the absence of planning.
Activity costs	No change	
Timing of activity	No change	
Level of activity	No change	

Coastal tourism and recreation:

Impact	Change	Reason and further information
Support costs	No change	This is not relevant as there are no significant development costs.
Activity costs	No change	This is not relevant as there are no significant development costs.
Timing of activity	No change	This is not relevant as there are unlikely to be long lead-in times as there are with development activities.
Level of activity	L: 0% C: 0.5% H: 1.5%	One local authority stated that an increased level of activity was expected from better knowledge of the marine environment. The IA specialists also assumed that new opportunities will result from the Marine Plans therefore increasing the overall level of coastal tourism. The IA specialists also considered that some proportion of this increase would divert terrestrial recreation activities and the rest would be entirely new activity. No evidence was available to guide the level expected so they assumed a level of 50%.

Dredging:

Impact	Change	Reason and further information
Support costs	No change	Key information is available independent of marine planning.
Activity costs	No change	Much of the key information is available independent of marine planning, although identifying currents and sediment deposit rates could be very useful for the industry.
Timing of activity	L: 0% C: 0.25% H: 0.38%	The IA specialists assumed that dredging is an enabling activity and linked to increased activity in other sectors. The change is driven by changes assumed in the Ports and Renewables sectors.
Level of activity	L: 0% C: 0.08% H: 0.25%	The IA specialists assumed that dredging is an enabling activity and linked to increased activity in other sectors. The change is driven by changes assumed in the Ports and Renewables sectors.

Fisheries:

Impact	Change	Reason and further information
Support costs	No change	No significant development costs.
Activity costs	No change	No significant development costs.

Timing of activity	No change	No significant lead-in times as experienced for development activities.
Level of activity	L: 0% C: 0% H: 0.5%	Fishing representatives explained that there were currently conflicts between fisheries and offshore wind developments and Marine Conservation Zones, displacing fishing activities and concentrating more activity in other areas. Marine planning could manage these conflicts better through facilitating and encouraging dialogue between these competing interests allowing more activity overall. They pointed to constructive dialogue with the oil and gas sectors. They also pointed to the risk that if this dialogue does not take place and if fishing is not given due attention in Marine Plans it could be crowded out by activities considered of higher priority. This would not be the intention of marine planning and consistent with the general assumption that planning will be implemented in line with intentions this is covered in the Risks section rather than an impact in the core analysis.

Marine leisure:

Impact	Change	Reason and further information
Support costs	No change	There are some reasons why planning might increase costs and other reasons why it might reduce costs
Activity costs	No change	No impact identified
Timing of activity	L: 0% C: 1.0% H: 1.0%	Marine leisure representatives were of the view that increased cross-government collaboration would enable accelerated development.
Level of activity	L: 0% C: 0.5% H: 1.5%	<p>Marine leisure representatives believed that marine planning would facilitate an increased level of coastal tourism through increased knowledge of where to build marine leisure developments, more influence on the decision-making process and better arrangements for conflict resolution. They were also of the view that taking better account of the cumulative effects of developments and of spawning grounds will help preserve fish species and encourage more activity in the longer term.</p> <p>The IA specialists considered that some proportion of this increase would divert terrestrial recreation activities and the rest would be entirely new activity. No evidence was available to guide the level expected so they assumed a level of 50%.</p>

Oil and gas exploration:

Impact	Change	Reason and further information
Support costs	No change	Oil and gas developments are already subject to a high degree of planning and marine planning is unlikely to significantly affect developments.
Activity costs	No change	
Timing of activity	No change	
Level of activity	No change	

Port Development:

Impact	Change	Reason and further information
Support costs	No change	No impact identified
Activity costs	No change	No impact identified
Timing of activity	L: 0% C: 0.5% H: 0.75%	Acceleration associated with increased certainty in the planning system.

Level of activity	No change	Ports do not compete for space with other marine activities in the same way as other activities.
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Renewables:

Impact	Change	Reason and further information
Support costs	L: 0% C: -3% H: -5%	Reduction in support costs associated with the increased availability of information during scoping stage. The IA specialists have assumed that support costs might represent 10% of the total application costs on the basis of previous experience. An estimate for the costs of development of application costs £3,682,000 is used based on a 2006 study ¹ . It is assumed there will be one new development each year.
Activity costs	L: 0% C: - 0.5% H: - 1%	Representatives of the renewables industry were of the view that costs would reduce as a result of reduction in conflict and optimisation of the system. The proportions are applied to the full application costs.
Timing of activity	No change	No change expected, however, renewables representatives did state that the most beneficial impact marine planning could have would be "Increased certainty and conflict reduction /avoidance leading to a faster consenting process and reduced costs". They also stated that "By reducing conflict and strongly supporting [offshore wind] developments consenting could be made easier."
Level of activity	L: 0% C: 0.15% H: 0.5%	Modest increase assumed resulting from the promotion of certain areas.

Shipping:

Impact	Change	Reason and further information
Support costs	No change	Shipping is not expected to be affected significantly by marine planning.
Activity costs	No change	
Timing of activity	No change	
Level of activity	No change	

Telecommunications:

Impact	Change	Reason and further information
Support costs	No change	Discussions with industry suggested that rationalisation of information could speed applications for sub-sea infrastructure up. While infrastructure is currently planned, improvements in planning could benefit the sector. It is cautiously assumed however, that planning will not affect .
Activity costs	No change	
Timing of activity	No change	
Level of activity	No change	

¹ Study of the costs of offshore wind generation - Ode 2006

Annex 4: Rate at which the impacts of Marine Plans are experienced

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Plan 1	0%	0%	0%	50%	60%	70%	80%	90%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Plan 2	0%	0%	0%	50%	60%	70%	80%	90%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Plan 3	0%	0%	0%	0%	0%	50%	60%	70%	80%	90%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Plan 4	0%	0%	0%	0%	0%	50%	60%	70%	80%	90%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Plan 5	0%	0%	0%	0%	0%	0%	0%	50%	60%	70%	80%	90%	100%	100%	100%	100%	100%	100%	100%	100%
Plan 6	0%	0%	0%	0%	0%	0%	0%	50%	60%	70%	80%	90%	100%	100%	100%	100%	100%	100%	100%	100%
Plan 7	0%	0%	0%	0%	0%	0%	0%	0%	0%	50%	60%	70%	80%	90%	100%	100%	100%	100%	100%	100%
Plan 8	0%	0%	0%	0%	0%	0%	0%	0%	0%	50%	60%	70%	80%	90%	100%	100%	100%	100%	100%	100%
Plan 9	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	50%	60%	70%	80%	90%	100%	100%	100%	100%
Plan 10	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	50%	60%	70%	80%	90%	100%	100%	100%	100%
Average	0%	0%	0%	10%	12%	24%	28%	42%	48%	62%	68%	82%	88%	92%	96%	98%	100%	100%	100%	100%

Annex 5: Profile of economic effects by category and sector

Profile of economic effects by category, £m

	2010, 2011, 2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	NPV	
Reduced Transaction Costs																				
Reduced activity costs	0.00	0.009	0.002	0.011	0.004	0.013	0.006	0.013	0.006	0.013	0.006	0.004	0.004	0.002	0.002	0.000	0.000	0.000	0.000	0.070
Reduced specialist support costs	0.00	0.009	0.002	0.010	0.003	0.012	0.005	0.012	0.005	0.012	0.005	0.003	0.003	0.002	0.002	0.000	0.000	0.000	0.000	0.065
Improved Investment Climate																				
Increase in overall level of activity	0.0	1.8	2.3	5.0	6.2	10.1	12.7	18.3	21.9	29.1	34.5	40.0	46.5	53.1	60.8	68.4	77.4	87.7	348.7	
Acceleration of activities	0.0	1.3	1.6	3.4	4.1	6.4	7.5	10.1	11.5	14.3	15.9	17.2	18.6	19.7	20.8	21.6	22.3	23.1	137.8	
TOTAL	0.0	3.1	4.0	8.4	10.4	16.5	20.3	28.4	33.4	43.5	50.4	57.2	65.1	72.7	81.6	90.0	99.7	110.9	486.6	

Profile of economic effects by sector, £m

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	NPV
Aggregates	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Aquaculture	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	1.1
CCS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Coastal Tourism	0.0	0.0	0.0	0.9	1.1	2.3	2.7	4.0	4.7	6.1	6.7	8.2	8.9	9.4	9.9	10.2	10.5	10.6	10.7	10.8	74.9
Dredging	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.5
Fisheries	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Marine Leisure	0.0	0.0	0.0	1.1	1.3	2.8	3.4	5.3	6.4	8.6	9.9	12.4	13.9	15.2	16.6	17.7	18.9	19.7	20.6	21.5	122.1
Oil & Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ports	0.0	0.0	0.0	0.7	0.8	1.7	2.0	3.1	3.7	4.8	5.4	6.7	7.4	7.9	8.5	8.9	9.3	9.5	9.8	10.0	63.4
Renewables	0.0	0.0	0.0	0.4	0.6	1.6	2.2	3.9	5.5	8.7	11.2	15.9	20.0	24.5	29.9	35.7	42.7	49.9	58.4	68.3	224.6
Shipping	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Telecommunications	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL	0.0	0.0	0.0	3.1	4.0	8.4	10.4	16.5	20.3	28.4	33.4	43.5	50.4	57.2	65.1	72.7	81.6	90.0	99.7	110.9	486.6

Annex 6: Carbon assessment workings

	Total CO2 (tonnes)¹	CO2 per £²	Traded	Non-traded
Aggregates	134,637	0.002	0	115
Aquaculture	10,814	0.0006	0	953
CCS	0	0	0	0
Coastal tourism	Not quantified	0	0	0
Dredging	157,343	0.002	0	1985
Fisheries	182,250	0.002	0	0
Marine leisure	180,105	0.0001	0	23996
Oil and gas	25,100,000	0.002	0	0
Ports	1,184,756	0.0002	0	24846
Renewables	34,535	0.00002	7296	0
Shipping	8,397,900	0.003	0	0
Telecoms	1,651,632	0.001	0	0
TOTAL (TONNES)			7296	51896

¹ These estimates are from a variety of industry and government sources.

² This is based on the total tonnes of divided by the total turnover which was estimated for the do nothing scenario.