POST-ADOPTION SEA STATEMENT – COVER NOTE

PART 1

To: SEA.gateway@scotland.gsi.gov.uk

or

SEA Gateway
Scottish Executive
Area 1 H (Bridge)
Victoria Quay
Edinburgh EH6 6QQ

PART 2

A post-adoption SEA statement is attached for the PPS entitled:

A Sustainable Energy Strategy for Orkney

The Responsible Authority is:

Orkney Islands Council

PART 3

Contact name	**Eileen Summers**
Job Title	**Environment Officer (Policy)**
Contact address	**Development Planning & Regeneration** **Development & Environment Services** **Orkney Islands Council** **School Place** **Kirkwall** **Orkney KW15 1NY**
Contact tel. no.	01856 87 3535 ext. 2828
Contact email	**eileen.summers@orkney.gov.uk**
Signature & date	

Blank page

POST - ADOPTION SEA STATEMENT

Post-adoption SEA statement for:

A Sustainable Energy Strategy for Orkney

Adopted on:

29 September 2009

Responsible Authority:

Orkney Islands Council

POST-ADOPTION SEA STATEMENT
INTRODUCTION

This document (referred to here as the post-adoption SEA statement) has been prepared in accordance with Section 18 of the Environmental Assessment (Scotland) Act 2005.

POST-ADOPTION SEA STATEMENT
AVAILABILITY OF DOCUMENTS

WEBSITE

The full PPS as adopted, along with the Environmental Report and post-adoption SEA Statement are available on the Responsible Authority's website at:

www.orkney.gov.uk

OFFICE ADDRESS

The PPS, as adopted, along with the Environmental Report and post- adoption SEA Statement may also be inspected free of charge (or a copy obtained for a reasonable charge) at the principal office of the Responsible Authority:

Contact name, address and telephone number

Eileen Summers - contact details as above

Times at which the documents may be inspected or a copy obtained:

Monday to Friday between the hours of 09:00 am and 05:00 pm

Contents

1 Introduction……5

1.1 SEA progress to date

1.2 Availability of documents

1.3 Key facts about *A Sustainable energy Strategy for Orkney*

2 Description of the SEA Process ……7

3 Summary of Key SEA Findings ……8

4 Incorporation of SEA Findings into the Final Strategy ……10

5 Statutory and Public Consultation Responses ……14

6 Reasons for Adopted Strategy ……22

7 Monitoring Strategy ……23

8 Conclusions ……28

1 Introduction

The Post Adoption Statement has been prepared in accordance with Section 18 of the Environmental Assessment (Scotland) Act 2005 for *A Sustainable Energy Strategy for Orkney*. The Strategy addresses a number of linked issues relating to energy – the rising price of fossil fuels, the growing interest in renewable energy development and increasing concerns over climate change and the need to reduce carbon footprint.

The purpose of the Post Adoption Statement is to demonstrate how the SEA findings have been incorporated into the Strategy and to illustrate how the Environmental Report consultation comments have been addressed. Key SEA findings are summarised and changes that have been made to the draft Strategy following consultation are documented, along with any corresponding additional likely effects on the environment of Orkney.

The Statement also includes details of how the environmental effects of the implemented Strategy will be monitored and remedial action in the event of the identification of unforeseen adverse effects. Full details of the assessment process and its findings can be found in the Final Environmental Report.

The Post Adoption Statement should be produced as soon as reasonably practicable after the adoption of the Strategy to provide specified information to the Consultation Authorities and the public. Consultation Authorities will be informed regarding the adoption of the Strategy and provided with a copy, as adopted, along with the Post Adoption Statement.

1.1 SEA progress to Date

SEA progress to date and key milestones are outlined in Table 1.

Table 1: SEA progress to date

Milestone activity	Publication dates
Screening	Screening was considered unnecessary as the Strategy qualifies under Section 5(3) of the Environmental Assessment (Scotland) Act 2005.
Scoping Report	22 April 2008
Scoping Statutory Consultation	22 April – 27 May 2008
Environmental Assessment	August - September 2008
Environmental Report and Draft Strategy	August - September 2008
Public and Statutory Consultation	23 December 2008 – 11 February 2009
Post Adoption Statement and Final Environmental Report	6 May 2010

1.2 Availability of Documents

A Sustainable Energy Strategy for Orkney along with the SEA Environmental Report and Post Adoption Statement are available on the Orkney Islands Council website. Hard copies of the documents may also be inspected free of charge from Monday to Friday between the hours of 9am and 5pm at the Orkney Islands Council office:

Customer Services
Orkney Islands Council
School Place
Kirkwall
Orkney
KW15 1NY
Telephone 01856 873535
Website: www.orkney.gov.uk

1.3 Key Facts about *A Sustainable Energy Strategy for Orkney*

The key facts about *A Sustainable Energy Strategy for Orkney* are set out in Table 2 below.

Table 2: Key facts relating to *A Sustainable Energy Strategy for Orkney*

Key Facts	Detail
Responsible Authority	Orkney Islands Council
Title of Plan / Programme	*A Sustainable Energy Strategy for Orkney*
Purpose of Plan	To provide strategic direction on energy issues for the entire community of Orkney. *A Sustainable Energy Strategy for Orkney* is a non-statutory document, but it is intended that it will guide the Council and other Community Planning partners in undertaking a wide range of actions in future years.
Plan subject	Energy
Period Covered by Plan	The Strategy identifies renewable energy targets for the next ten years and beyond.
Frequency of Updates	The Strategy will be subject to review on a 3-5 year basis
Plan Area	The administrative area of Orkney Islands Council
Plan Purpose and / or Objectives	Three linked overall aims of the Strategy were endorsed by the Council and the Community Planning Steering Committee in 2006. These are designed to capture all the themes relevant to energy in Orkney: • To ensure Orkney uses energy as efficiently as possible, and has a secure and affordable energy supply to meet its future needs. • To add value to Orkney's renewable energy resources, for the benefit of the local economy and local communities, and without damaging the environment. • To reduce Orkney's carbon footprint. It is therefore considered appropriate to produce a Strategy which links all these issues and considers both the future energy needs of Orkney and the potential within the County for further utilisation of energy from renewable sources.
Contact Point	Shona Croy Assistant Director (Development Planning and Regeneration) Department of Development and Environment Services Orkney Islands Council School Place Kirkwall KW15 1NY Tel: 01856 873535 Email: Shona.Croy@orkney.gov.uk

2 DESCRIPTION OF THE SEA PROCESS

A Sustainable Energy Strategy for Orkney **has been subject to a process of Strategic Environmental Assessment (SEA), as required under the Environmental Assessment (Scotland) Act 2005. This has included the following activities:**

1. **Taking into account the views of the Scottish Environment Protection Agency, Scottish Natural Heritage and the Scottish Ministers (Historic Scotland) regarding the scope and level of detail that was appropriate for the Environmental Report;**
2. **Preparing an Environmental Report on the likely significant effects on the environment of the draft Strategy which included consideration of:**
    - **the baseline data relating to the current state of the environment;**
    - **links between the Strategy and other relevant strategies, policies, plans, programmes and environmental protection objectives;**
    - **existing environmental problems affecting the Strategy;**
    - **the Strategy's likely significant effects on the environment (positive and negative);**
    - **measures envisaged for the prevention, reduction and offsetting of any significant adverse effects;**
    - **an outline of the reasons for selecting the alternatives chosen; and**
    - **monitoring measures to ensure that any unforeseen environmental effects will be identified allowing for appropriate remedial action to be taken.**
3. **Consultation on the Environmental Report;**
4. **Consideration of the Environmental Report and the results of consultation in making final decisions regarding the Strategy; and**
5. **Committing to monitoring the significant environmental effects of the implementation of the Strategy. This will also identify any unforeseen adverse significant environmental effects and to enable appropriate remedial action to be taken.**

This Post Adoption Strategy considers the final two stages of the SEA activities detailed above.

3 Summary of Key SEA Findings

3.1 Introduction

This chapter summarises the findings of the SEA Environmental Report.

***A Sustainable Energy Strategy for Orkney* has three linked overall aims which are designed to capture all the themes relevant to energy in Orkney. These are:**

1. **To ensure Orkney uses energy as efficiently as possible, and has a secure and affordable energy supply to meet its future needs.**
2. **To add value to Orkney's renewable energy resources, for the benefit of the local economy and local communities, whilst minimising damage to the environment.**
3. **To reduce Orkney's carbon footprint.**

The Strategy addresses the following eleven Strategic Issues:

1. **The future level of renewable energy production in Orkney:**
   - **Maintain the present level of renewable energy production in Orkney;**
   - **50MW of installed renewables capacity within 5 years, representing electricity use equivalence; or**
   - **160MW of installed renewables capacity within 10 years, representing energy use equivalence.**
2. **Electricity transmission.**
3. **Planning issues for renewable energy projects.**
4. **Community benefit.**
5. **Fuel poverty.**
6. **Energy efficiency and small-scale renewables.**
7. **Travel and transport.**
8. **Marine renewables.**
9. **Jurisdiction over marine projects.**
10. **The hydrogen economy.**
11. **Policy formulation and monitoring.**

***A Sustainable Energy Strategy for Orkney* was assessed to identify its likely environmental effects on the following receptors:**

- **Climatic factors;**
- **Air quality;**
- **Biodiversity, fauna and flora;**
- **Water;**
- **Soil;**
- **Landscape;**
- **Cultural heritage;**
- **Population;**
- **Human health; and**
- **Material assets.**

The consideration of environmental effects has been integral to the process of developing the Strategy. The environmental assessment concluded that, overall, implementation of the Strategy is likely to have beneficial effects on the climate change, air quality, population and human health receptors.

It also concluded that, due to the level of constraint relating to on-shore wind energy development in Orkney, further major growth of the renewable energy sector in the County is

more likely to focus on the marine environment, through the development of off-shore wind and marine wave and tidal energy. Assessment highlighted the potential for marine renewables development to have adverse effects in the marine environment and stressed that to enable these effects to be quantified, further information would need to be obtained in relation to other users of the marine environment; the distribution and extent of marine habitats and species in Orkney's coastal waters; and the design and proposed location of devices.

The likely effects on the environmental receptors are set out in more detail below.

3.2 Major benefits of the Strategy

Climatic factors

Implementation of the actions relating to all eleven Strategic Issues will contribute towards major long-term benefits. In particular, further growth of renewable energy developments in Orkney and its coastal waters are likely to make a significant contribution towards the targets set by the Scottish and UK governments in terms of both increasing the level of electricity production from renewable energy sources and lowering the country's greenhouse gas emissions.

Air quality

If expansion of renewable energy development in the County were to enable a modal shift towards greater use of non-fossil fuels, e.g. in the transport sector and space heating, this would lead to significant reductions in emissions of air borne pollutants such as nitrous oxides and sulphur dioxide. Should the higher target of 230MW or more of installed renewables capacity be achieved, these benefits may also prove significant at a national level if energy could be exported from the County.

Population and Human health

A number of impacts, both positive and negative would be possible in relation to the population and human health SEA objectives and these include:

- **Increased employment opportunities within an expanding renewable energy industry and its ancillary services;**
- **Possible availability of a more affordable energy supply;**
- **Improved connectivity, whether through the availability of a more affordable and less polluting fuel supply or the provision of fixed links between islands;**
- **Reduced requirement for energy use, e.g. for space heating, as a result of improvements to the design and insulation of buildings.**

3.2 Adverse effects of the Strategy

Biodiversity, fauna and flora

Possible adverse impacts upon Biodiversity, fauna and flora receptors include:

- **Loss of substratum due to device/array footprints and electricity cable routes – affecting benthic habitats and shellfish areas;**
- **Increased barriers to movement, especially if arrays of renewable devices were to be clustered in constrained areas, e.g. in tidal narrows, channels, sounds and firths;**
- **Increased risk of collision with marine mammals, birds, fish and vessels;**
- **Increased risk of potentially serious pollution incidents resulting from incidents involving shipping, in particular laden oil tankers or bulk carriers;**
- **Increased noise from the installation or operation of devices which may affect cetaceans and seals in particular. In some situations, high levels of noise could lead to the displacement of key species from the area.**
- **Increased risk of habitat exclusion for seabirds, marine mammals and fish;**
- **Risk of damage to marine habitats and species which are important in an international, national and local context.**

Water

Possible impacts on the Water SEA objective include:

- **Increased risk of accidental contamination from device failures or as a result of collision with vessels, for example a laden oil tanker or a bulk chemical carrier; and**
- **Changes to tidal flow and wave energy regimes.**

Soil

Possible impacts on the Soil SEA objective include:

- **Increased disturbance of the coastal environment and features where a number of cables are brought ashore; and**
- **possible increased risk of coastal erosion.**

Landscape and Cultural Heritage

Potential impacts on the Landscape and Cultural heritage receptors include:

- **The visual and landscape effects of development of much larger on-shore wind energy devices than those currently deployed in the County; and**
- **Increased levels of intrusion by offshore renewables technology in sensitive seascapes.**

Population and Human Health

Likely adverse effects on the population and human health receptors include:

- **Conflicting demands for space in the vicinity of existing transport routes for ferry services to and from Orkney and Shetland and within the Orkney Isles; and**
- **Possible long-term displacement of fishing grounds due to the installation of devices and cables.**

Material Assets

The demand for sand and aggregate to construct foundations for renewable energy devices, access tracks and other ancillary development will impact upon local sources of these materials.

Cumulative effects

Situations are likely to arise whereby a number of marine renewable device arrays would be installed in different coastal locations around Orkney at the same time. Under these circumstances there is potential for significant cumulative effects especially in terms of physical disturbance, habitat exclusion, increased barriers to movement for seals, cetaceans and fish by restricting the areas that are available for feeding, and routes used for migration. These factors could lead to long-term displacement of certain key species.

Due to the level of uncertainty associated with the clustering of device arrays it is not possible to quantify the cumulative effects in terms of effect significance. Likely effects will depend on the number and design of arrays, where they are located, and the size of the footprint of these arrays.

4 Incorporation of SEA findings into the final strategy

Assessment of the Strategy identified the potential for both beneficial and adverse effects and these have been summarised in Section 3 above. Where adverse effects were identified, measures were suggested to avoid, minimise or offset these effects.

These mitigation measures and the means through which they were or will be implemented are set out in Table 3 below.

TABLE 3: Mitigation measures identified to avoid, minimise or offset the likely adverse effects of the Strategy

	SUGGESTED MITIGATION	INTEGRATED INTO STRATEGY (YES / NO)	CHANGES TO STRATEGY
A Sustainable Energy Strategy for Orkney **may lead to further on-shore wind energy development in the County, which in turn has potential to cause adverse effects on:** • **Biodiversity, fauna and flora** • **Water** • **Soil** • **Landscape** • **Cultural heritage** • **Population** • **Human health** • **Material assets**	***Supplementary Guidance On-shore Wind Energy Development*** **was prepared in October 2008 for the purpose of protecting those areas which are sensitive to on-shore wind energy development and guiding prospective developers towards those areas which are more likely to accommodate further development.** **The *SG* and the additional use of planning conditions are therefore considered to provide mitigation against possible adverse effects from additional on-shore wind energy development in Orkney.** **The Strategy should indicate that planning issues associated with on-shore wind energy development are addressed by the Supplementary Guidance.**	**Yes**	***Section 6, Planning issues for Renewable Energy Projects*** **confirms the preparation and adoption of the Council's *Supplementary Guidance Onshore Wind Energy Development*.** **A brief overview of the Spatial Policy is provided and the necessity is highlighted for developers to satisfy the requirements of the nine Development Criteria set out in the SG.**
A Sustainable Energy Strategy for Orkney **may lead to the emergence of a marine renewable energy industry in the seas around Orkney.** **The likely environmental effects of marine renewable energy development are uncertain as any effects would be dependant on the location, scale and design of renewable energy development.**	**In the Environmental Report it was recommended that a Marine Spatial Plan should be prepared for the marine area around Orkney which should consider the likely effects of further development of the marine renewable energy industry on issues including:** • **The distribution and extent of protected sites and their species;** • **Usage of the area and routes routinely followed by cetaceans;** • **Seal breeding and haul-out sites;** • **Benthic biotopes and assemblages;** • **Fish spawning grounds;**	**No**	**Before the Strategy was completed it became apparent that marine planning in the seas around Orkney was being addressed by the Scottish Government, and work had been commissioned to produce a framework for the future preparation of a marine spatial plan for the Pentland Firth and Orkney Waters.** **The Pentland Firth and Orkney Waters Marine Spatial Plan Framework & Regional Locational Guidance for Marine Energy was published on 29 March 2010. The**

	SUGGESTED MITIGATION	INTEGRATED INTO STRATEGY (YES / NO)	CHANGES TO STRATEGY
However, the Environmental Report found that there would be potential for adverse effects on: **Biodiversity, fauna and flora** **Water** **Soil** **Landscape** **Cultural heritage** **Population** **Human health** **Cumulative effects are also likely due to both additive and synergistic effects.**	• **Presence of otter;** • **The need to undertake hydrological surveys of sea areas around Orkney;** • **The possibility of increasing sea levels as a result of climate change and its relevance to the selection of landfall sites for marine electricity cables;** • **Landscape/seascape and cultural heritage issues which are relevant to the siting of developments and the selection of possible landfall sites for cables and related electricity transmission infrastructure;** • **The requirement to consult fully with other users of the sea, in particular the Council's Marine Services Department and ferry operators such as NorthLink Ferries, Orkney Ferries, Pentland Ferries and John O' Groats Ferries as well as local inshore fisheries associations;** • **The requirement to consider the likely cumulative effects (additive and synergistic) of multiple marine renewable energy developments in the seas around Orkney.**		**Framework contains a summary of existing information on different uses of the seas, shows how these different uses may impact on each other and makes recommendations for future research. It sets out how the marine spatial plan will be developed.** **The document also sets out draft Regional Locational Guidance for the development of wave and tidal resources.** **Formal consultation on the Framework will not be held; instead it will be discussed with stakeholders. There will be a full formal consultation on the draft of the plan, at a later date.** **On March 16, 2009 the Crown Estate announced that agreements have been signed to develop six wave and four tidal energy schemes in the Pentland Firth and Orkney Waters.**
Further development of the renewable energy industry in Orkney and its surrounding seas will lead to increased demand for material assets such as sand and aggregate.	**Orkney Islands Council intends to produce a Minerals Strategy which will address the sustainable supply of sand and aggregates.**	**No**	***A Sustainable Energy Strategy for Orkney*** **is a high level strategic document and this issue is therefore being addressed with this issue in the current Development Plan Review (DPR).** **In the DPR Main Issues Report, Planning for Minerals and Quarry Extraction**

	SUGGESTED MITIGATION	INTEGRATED INTO STRATEGY (YES / NO)	CHANGES TO STRATEGY
			emerged as one of the issues requiring a new policy approach. **The preferred option is to address this issue through the preparation of Supplementary Guidance which will provide further detail on the range of factors which would require to be considered in relation to the re-opening of historic quarries or extension of existing active quarries. The policy would be supported by a map identifying existing and potential mineral resources.**
Development of a hydrogen fuel cell demonstration project would have potential to cause adverse environmental effects.	**Plans for the development of individual renewable energy developments, including any development for the production of hydrogen gas, should be accompanied by a detailed Environmental Impact Assessment which would allow the identification of likely environmental effects and propose appropriate mitigation measures to avoid, minimise or offset adverse environmental effects.**	**No**	***A Sustainable Energy Strategy for Orkney* is a high level strategic document.** **The requirement for individual development projects to undergo Environmental Impact Assessment will be addressed through the Development Management process and the Marine Licensing system.**

5 Consultation Responses

The Environmental Report was published for public and statutory consultation along with the draft Strategy on 23rd December 2008. The consultation period ran for a period of six weeks until the 11th February 2009.

This chapter provides a summary of the opinions expressed during this consultation stage, in accordance with Section 16 of the Environmental Assessment (Scotland) Act 2005 and also indicates how these comments have been taken into consideration.

A number of minor changes were required to the Environmental Report to address responses made by both the Consultation Authorities and interested members of the public and these have been incorporated into the Final Environmental Report.

No material changes were made to *A Sustainable Energy Strategy for Orkney* following the consultation process.

TABLE 4: CONSULTATION RESPONSES AND HOW THEY HAVE BEEN TAKEN INTO ACCOUNT

Consultee / Respondent	Consultation Ref.	Environment Report Ref.	Consultation Comment	Response and Action
Scottish Natural Heritage		General comments	The Environmental Report presents a detailed SEA, which SNH considers is well presented and has addressed the key requirements under the Act. SNH has no comments to make on the Environmental Report.	Comment welcomed. No action is required.
Scottish Environment Protection Agency		General comments	Comments made by SEPA at the scoping stage of this Strategy and in its responses to other Orkney Island Council SEA consultations have been taken into consideration in the preparation of this Environmental Report. As a result SEPA has limited detailed comments to make.	Comment welcomed and noted.
	1	Detailed comments	SEPA agrees that the non-baseline targets are likely to have positive effects against the climatic factors and air quality SEA receptors and unknown (but generally negative effects) against the soil and water SEA receptors.	Comment welcomed and noted.
	2		In relation to electricity transmission, while the exact location of substations and sub-sea and on-land cabling are not yet known, it is reasonable to consider that even if sensitively located the scale of such a proposal would result in negative effects on the water and soil SEA Objectives.	Comment welcomed and noted.
	3		In relation to jurisdiction over marine projects it is not clear how local control over development will have a positive effect against the climate change, air quality, water, and soil SEA Objectives.	It is acknowledged that local control over development is unlikely to have positive effect against the climate change and air quality issues and the assessment of Section 12 has been amended accordingly. However, local knowledge of the distribution of Local Nature Conservation Sites is likely to lead to increased protection of such sites, e.g. in determining landfall sites for electricity cables, locations for electricity substations and access routes.

Consultee / Respondent	Consultation Ref.	Environment Report Ref.	Consultation Comment	Response and Action
	4		SEPA is satisfied with the mitigation measures proposed to offset possible negative effects which include coverage by a new Martin Spatial Plan, planning conditions and the Supplementary Guidance for On-shore Wind Energy.	Comment welcomed and noted.
Historic Scotland	1	Non-technical summary	Historic Scotland finds the non-technical summary to be clear and welcomes the summary of the key positive and negative effects which demonstrate the outcomes of the assessment. Likewise, the introductory section provides a clear overview of the strategy and the summary for each strategic issue is welcome.	Comment welcomed and noted.
	2	Review of PPS and Baseline Information	Historic Scotland is content with the review of PPS and that the key objectives for the historic environment have been considered during the assessment. Simply for information, NPPG 5 and 18 have now been replaced by Scottish Planning Policy 23: Planning and the Historic Environment (SPP 23). This policy statement sets out the national planning policy for the historic environment and indicates how the planning system will contribute towards the delivery of Scottish Ministers' policies as set out in the current Scottish Historic Environment Policy	Comment welcomed and noted. These documents will be used in future.
	3		Historic Scotland welcomes the baseline information presented in Appendix B which provides a clear overview of The Orkney Islands rich historic environment.	Comment welcomed and noted.
	4	Assessment of the Objectives (Strategic Issues)	Historic Scotland notes that many of the predicted effects for the historic environment are unknown and/or potentially negative and will largely depend upon the location of renewable energy developments. It welcomes the commentary section which highlights that your Council's Supplementary Guidance (SG) for on-shore wind development will be used to mitigate this potential by guiding developments to areas more likely to accommodate renewable energy developments.	Comment welcomed and noted.

Consultee / Respondent	Consultation Ref.	Environment Report Ref.	Consultation Comment	Response and Action
	5		Strategic Issues 3 and 11 are highlighted as having major positive effects on the historic environment. Regarding Issue 3, whilst accepting that the SG will be effective in mitigating any adverse effects, it is difficult to see how the strategy in itself would lead to a major positive effect upon the historic environment. You may wish to revise the scoring for this objective to neutral – assuming the SG mitigates any adverse effects, the historic environment will remain unaffected.	Positive environmental impact is recorded where the policy is assessed as providing protection to the SEA issue, and negative environmental impact is recorded where the policy falls short of providing protection. Where the effect of the policy is uncertain, this is recorded by use of a question mark and a zero indicates that the policy provides no environmental protection to that particular SEA issue.
	6		Historic Scotland agrees with the conclusion for Strategic Issue 11, which seeks to monitor policy formulation for any contradictions or operating difficulties. This will be helpful in testing whether the strategy and associated SG is effective in safeguarding the historic environment.	Comment welcomed and noted.
	7	Monitoring	Historic Scotland is content with the monitoring activities for the historic environment (Number of renewable energy applications refused due to their likely impact upon cultural heritage resources). However, you may wish to also include an additional monitoring activity which records the number of applications consented where adverse effects are predicted (e.g. during EIA). This will be useful in monitoring the effectiveness of the strategy and could form part of the overall policy formulation monitoring process which will seek to identify such implementation issues.	Noted - this additional monitoring activity has been included in the Post Adoption Statement and Final Environmental Report.
	8	Appendix D	As a minor point it is indicated that the consultation body comment quoted in Appendix D from Historic Scotland was that for the draft issues paper and not the SEA scoping report.	Noted. Amendment made to Final Environmental Report.

Consultee / Respondent	Consultation Ref.	Environment Report Ref.	Consultation Comment	Response and Action
Neil Kermode		General comment	In the SEA notes there seems to be some confusion as to energy demand (which will be in MWh) and installed capacity (MW). There is an assumption that renewable energy devices will run for about 50% of the time, and whilst this may be the case for wind it is not likely to be this high for wave and tide. At present it is hard to say what it will be.	In the Final Environmental Report the text relating to the different renewable energy targets has been altered to more closely reflect the wording of the Strategy.
Martin Lee	1	Table 1.3	There appears to be a mistake in the current figure for renewable energy generation systems in Orkney at present and this appears to stem from mistakes in the table in the associated SEA document which shows the Hammars Hill project as operational. It would appear not to exist on the ground at the moment and still be subject to planning objections.	This figure did not stem from the mistake in Table 1.3. It was an approximation of the renewables capacity in Orkney at the time of writing 'A Sustainable Energy Strategy for Orkney'. However, the mistake in Table 1.3 of SEA has been noted and the Final Environmental Report contains an updated table for wind energy development in Orkney.
	2		The 2.0 MW NegMicon machine at Burgar Hill was removed and subsequently scrapped. There is a * against this but I can't find a note to say what it means.	In the Final Environmental Report this fact is noted in the updated table for wind energy development in Orkney.
	3		The 3 machines in Sanday are each 2.75MW making a total of 8.25MW though these are limited to a maximum output of 8MW or less if system conditions require a lower limit.	Noted.
	4		Taking these changes into account I believe that the current effective installed capacity is 22.15MW maximum or less if there are constraints on the operation of the machines in Sanday.	Noted.

Consultee / Respondent	Consultation Ref.	Environment Report Ref.	Consultation Comment	Response and Action
J. A. McCutcheon	1	Assessment of the Objectives (Strategic Issues)	While appreciating that the above is a high level strategy document there are some points which are made, of which the details give me some cause for concern. The present report is littered with references to public health, generally tending to give the impression that wind energy is beneficial (e.g. summary of positive effects.... Human health issues; summary of negative effects....no mention of human health issues).	A Sustainable Energy Strategy for Orkney is indeed a high level document and, as such, it addresses each of the 'Strategic Issues' at a strategic level. Orkney Islands Council's detailed policy with regard to onshore wind energy development is presented in Supplementary Guidance On-shore Wind Energy Development. Strategic Environmental Assessment of A Sustainable Energy Strategy for Orkney concluded that the likely negative effects relating to onshore wind energy had been addressed by the Supplementary Guidance document. Although Spatial Policy 1 of Supplementary Guidance On-shore Wind Energy Development identifies a number of areas as Broad Areas of Search for onshore wind energy development, it also makes clear that it will be necessary to demonstrate that every proposal is satisfactory in terms of Development Criteria 1-9 and other material planning considerations before planning permission will be granted. The likely effects of on-shore wind energy development on human health are primarily addressed in Development Criterion 5 Quality of Life and Amenity. Also of relevance to human well-being are DC3 Landscape Impact and Cumulative Impact and DC4 Visual Impact and Cumulative Visual Impact.

Consultee / Respondent	Consultation Ref.	Environment Report Ref.	Consultation Comment	Response and Action
				Where assessment of ***A Sustainable Energy Strategy for Orkney***, Strategic Issue 3: Planning Issues for Renewable Energy Projects identifies positive impact, this indicates that the conclusion reached by the assessment is that the Council's policy, as set out in Supplementary Guidance On-shore Wind Energy Development, does indeed provide protection to the SEA environmental issue in question.
	2		The report states that villages will be protected by 2km buffer zones. I live in a settlement which has been known as a village for almost 200 years. It has no buffer zone. The report also states that selection of those residential areas to be provided with buffer zones was made from the Local Plan. The fact that the planners chose not to refer to this village as a village but as a housing cluster may well be suitable for directing development but it is not relevant when considering the health of the inhabitants.	During preparation of Supplementary Guidance On-shore Wind Energy Development Policy LP/H1 of the Orkney Local Plan (2004) was used to define the residential areas of Orkney. It is seen that this definition is therefore robust in planning and therefore legal terms.
	3		There appears to be no compulsion on commercial developers to make any contribution to the local community. The estimates of payments proposed are surely notional and could be construed as ephemeral carrots to smooth the way for the acceptance of bad-neighbour developments	There are limitations in planning law as to what can be required of a commercial developer.
	4		There are no indications of what 'local community' actually means. Is local within 500m of a wind farm? 1km? 30km?	This is not a subject which SEA can address.

Consultee / Respondent	Consultation Ref.	Environment Report Ref.	Consultation Comment	Response and Action
			The report vaguely mentions measures to avoid, reduce or offset negative effects on material assets, including buildings. In all probability residential properties close to wind farms will suffer considerable loss of value, but I have seen no reference to this or how it might be avoided, reduced or offset.	**Assessment of *A Sustainable Energy Strategy for Orkney* considered the likely effects of the Strategy on Orkney's natural material resources, i.e. sand and aggregate. The SEA objective for Material Assets which formed the criterion against which each Strategic Issue was assessed was: "To promote sustainable and efficient use of natural resources and facilitate the use of energy from renewable sources." Potential loss of property value is not a subject which SEA can address.**

6 Reasons for Selecting the Strategy as Adopted

The Strategy addresses eleven Strategic Issues but considers that the most pressing issue in Orkney is the question of how much renewable energy Orkney should aim to produce. It considers that development of renewables in Orkney will serve all three strategy aims, securing Orkney's energy supply in the future, reducing and compensating for Orkney's carbon footprint from energy use and proposes that *"Achieving in excess of 1GW of production should be an aspirational goal for the long term, capable of being considered as a definite future target when this strategy is reviewed. For the medium term, the target of electricity use equivalence, i.e. 50MW of installed renewables capacity) within 5 years, and energy-use equivalence (160MW) in 10 years, are considered to be realistic goals."*

The options for the Strategy are expressed as three renewable energy targets:

1. **Maintain the present level of renewable energy production in Orkney;**
2. **50MW of installed renewables capacity within 5 years, doubling the current capacity, representing electricity use equivalence and requiring active management of the existing grid; or**
3. **160MW of installed renewables capacity within 10 years, representing energy use equivalence and requiring a new 200MW grid connection.**

Moving beyond energy use equivalence would require further grid strengthening on the mainland, beyond what is currently planned. This target was not assessed as it is unlikely to be considered during the timescale of the current Strategy.

Selection of Target 1 would result in continuation of the current level of renewable energy development in Orkney. No additional benefit would be achieved in terms of contributing towards achievement of national targets on greenhouse gas emissions or renewable energy generation. Likewise, the anticipated employment opportunities associated with further development of the renewables industry would not arise. However, additional adverse impacts upon the remaining SEA receptors would be avoided.

Assessment of Target 2 found that, whilst a measure of further on-shore wind energy development would be likely, existing constraints mean that development of the marine renewables industry around Orkney would be necessary to achieve 50MW of installed capacity.

Similarly, achievement of Target 3 would require development of the marine renewables industry but at a much larger scale.

Achievement of both Targets 2 and 3 would bring about benefits in terms of contributing towards achievement of national targets on both greenhouse gas emissions and renewable energy generation, as well as the likelihood of reduced reliance on fossil fuels. Development of a hydrogen as a fuel for the future is a further possibility.

Significant benefit would be likely in terms of increased local employment opportunities, a factor which could help address the current trend in Orkney towards a predominantly older population.

However, the assessments highlighted the likelihood of significant adverse impacts from development at these scales, in particular on the natural and historic environment as well as on the requirements of other users of the sea.

On balance, Targets 2 and 3 were selected as the preferred medium-term options for *A Sustainable Energy Strategy for Orkney*.

7 Monitoring Strategy

Section 19 of the Environmental Assessment (Scotland) Act 2005 requires the Responsible Authority to monitor significant environmental effects of the implementation of the plan, programme or strategy in a manner which enables them to also identify unforeseen adverse effects at an early stage and to take appropriate remedial action. A set of monitoring indicators was set out in the Environmental Report.

Section 18(3) (f) requires the Responsible Authority to set out these monitoring measures in the post-adoption SEA statement. A number of changes or additions to the monitoring strategy have been made and these have been incorporated into Table 5 below. These changes are also included in the Final Environmental Report.

Table 5: Proposed Monitoring Strategy

SEA receptor	SEA Environmental Objective	Proposed Monitoring	Rationale	Target and Action	Data source
Climatic factors	To contribute towards the reduction of Scottish greenhouse gas emissions in line with Government targets	The level of renewable energy development in Orkney.	Increasing levels of renewable energy development will demonstrate progress towards meeting national targets.	The sustainable development and use of energy from renewable sources.	OIC Development Management
Air quality	To protect and where possible enhance air quality in line with national air quality standards	Changes in the levels of NO_2.	A significant modal change to electricity, especially for space heating could lead to localized improvements in air quality.	The sustainable development and use of energy from renewable sources	OIC Environmental Health (monthly)
Biodiversity, fauna & flora	To protect biodiversity and specified habitats and species.	Changes in monitored populations of protected species. Associated monitoring indicators of the Orkney LBAP. Areas of European or national designated sites affected by development.	It is important to maintain healthy and viable populations. European sites are key assets and, along with national sites, should be protected from development as a priority.	Appropriate LBAP indicators/targets should be incorporated into the monitoring framework. No change or increased areas of protection. If protected sites are affected, effective consultation with relevant authorities and developers will be required to determine the appropriate remediation / compensatory measures.	Local priorities, targets and indicators for monitoring - Orkney LBAP. SNH monitors designated international (Ramsar, SPA, SAC) and National (SSSIs) biodiversity sites through Site Condition Monitoring Surveys every six years.

SEA receptor	SEA Environmental Objective	Proposed Monitoring	Rationale	Target and Action	Data source
Water	Ensure that water resources, which include ground water, fluvial and coastal waters, are protected from adverse effects.	Monitor the number of classified water bodies to distinguish changes to number or length classified as excellent or good quality. Number of areas designated as priority water habitats.	SEPA maintains records of local ecological and chemical river quality and changes to the data will demonstrate any beneficial or adverse effects associated with development.	Maintain or improve local water body conditions.	SEPA Water Quality Data Local priorities, targets and indicators for monitoring - Orkney LBAP.
Soil	Safeguard soil quality and quantity.	Number of renewable energy applications approved that will be developed on areas of peat.	Peat represents a valuable storage facility for carbon and deep layers of peat should be protected from development.	At the planning stage, advise that development should avoid areas with deep layers of peat.	OIC Development Management
Landscape	To protect landscape character and local distinctiveness and also to safeguard visual amenity and scenic value	Number of renewable energy applications refused due to their likely impact upon landscape.	Effects on the landscape character should be a key consideration of any detailed development proposal and maintaining a record of development effects and changes to Landscape Character Assessment will demonstrate need for action.	Maintain high quality landscapes and improve on the landscape where possible. Encourage proper consideration of landscape effects.	OIC Development Management
Cultural heritage	To safeguard cultural heritage	Number of renewable energy	This will be useful in monitoring the effectiveness	Maintain Orkney's valuable historic environment.	OIC Development

SEA receptor	SEA Environmental Objective	Proposed Monitoring	Rationale	Target and Action	Data source
	resources and their settings through responsible design and siting of development	applications refused due to their likely impact upon cultural heritage resources 2. Number of applications consented where adverse effects are predicted, e.g. during EIA.	of the strategy and could form part of the overall policy formulation monitoring process which will seek to identify such implementation issues.		Management
Human health	Protect and enhance human health and residential amenity	Changes to the population profile, life expectancy and mortality causes.	Positive changes against baseline data could indicate healthier living conditions, e.g. due to better insulation and/or lower rates of fuel poverty.	Improved health conditions.	Census data General Register Office for Scotland.
Population	Improve the community environment and quality of life.	Estimated population of Orkney and its demographic profile.	Monitoring the number of people in the County will show if people are remaining in Orkney or moving here. This would indicate that it is a good place to stay and that employment opportunities are stable or improving.	Improved employment opportunities due to further development of the renewable energy industry in Orkney.	General Register Office for Scotland
Material assets	To promote sustainable and efficient use of natural resources and facilitate the use of energy from renewable sources	Progress of Supplementary Guidance on Minerals and Quarry Extraction.	The development of supplementary guidance will identify the most sustainable options for minerals extraction in future years.	Minerals extraction is undertaken with the minimum of adverse impact on other environmental receptors.	OIC Development Planning and Regeneration

SEA receptor	SEA Environmental Objective	Proposed Monitoring	Rationale	Target and Action	Data source
Cumulative effects	To avoid, reduce or offset adverse cumulative effects on the environment.	Action taken to produce a Marine Spatial Plan for Orkney.	Preparation of a Marine Spatial Plan will be necessary in order to direct new renewables development to areas where it can be best accommodated without adverse impact on the environment and other users of the sea.	Development of a successful marine renewables industry which operates alongside other users of the sea and avoids causing adverse effects on the environment.	Scottish Government

8 Conclusions

Strategic Environmental Assessment of *A Sustainable Energy Strategy for Orkney* has found that whilst significant environmental benefits are likely, for example in terms of contributing to national targets on greenhouse gases and renewable energy, significant adverse effects are also possible upon a number of the SEA environmental receptors. These issues will need to be addressed through careful consideration of the relevant environmental, social and economic information in order to achieve a level of renewable energy development which is sustainable.