

**SG14 – Spatial Framework and Guidance for Wind Energy Development
Strategic Environmental Assessment**

Environmental Report

November 2014

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NON TECHNICAL SUMMARY

Strategic Environmental Assessment

The Environmental Assessment (Scotland) Act 2005 requires that any Plan, Programme or Strategy prepared by Falkirk Council which is likely to have significant effects on the environment should go through a process of Strategic Environmental Assessment.

This report (which is a key stage of the Strategic Environmental Assessment process) is called the Environmental Report and its purpose is to set out the likely significant environmental effects of implementing the Spatial Framework and Guidance for Wind Energy Development SG. It also sets out the likely significant environmental effects of alternatives to the preferred approach set out in the consultative draft SG as well as actions to prevent, reduce and as fully as possible, offset any significant negative effects.

Spatial Framework and Guidance for Wind Energy Development SG

The purpose of the Spatial Framework and Guidance for Wind Energy Development Supplementary Guidance (SG) is:

- to provide guidance to developers and other key stakeholders on the key areas which require protection, those subject to constraint, and those where wind energy can potentially be accommodated; and
- to provide guidance against which planning applications for wind turbine proposals can be assessed.

The SG will be considered to be part of the Development Plan in the determination of such applications.

Consultation Process

In accordance with Section 15 (3) of the Environmental Assessment (Scotland) Act, Falkirk Council have agreed a 7 week Statutory Consultation period for Statutory responses (Scottish Ministers/ Historic Scotland (HS)/ The Scottish Environmental Protection Agency (SEPA) and Scottish Natural Heritage). The public consultation period will also run for a period of 7 weeks from 28th November 2014 until 16th January 2015.

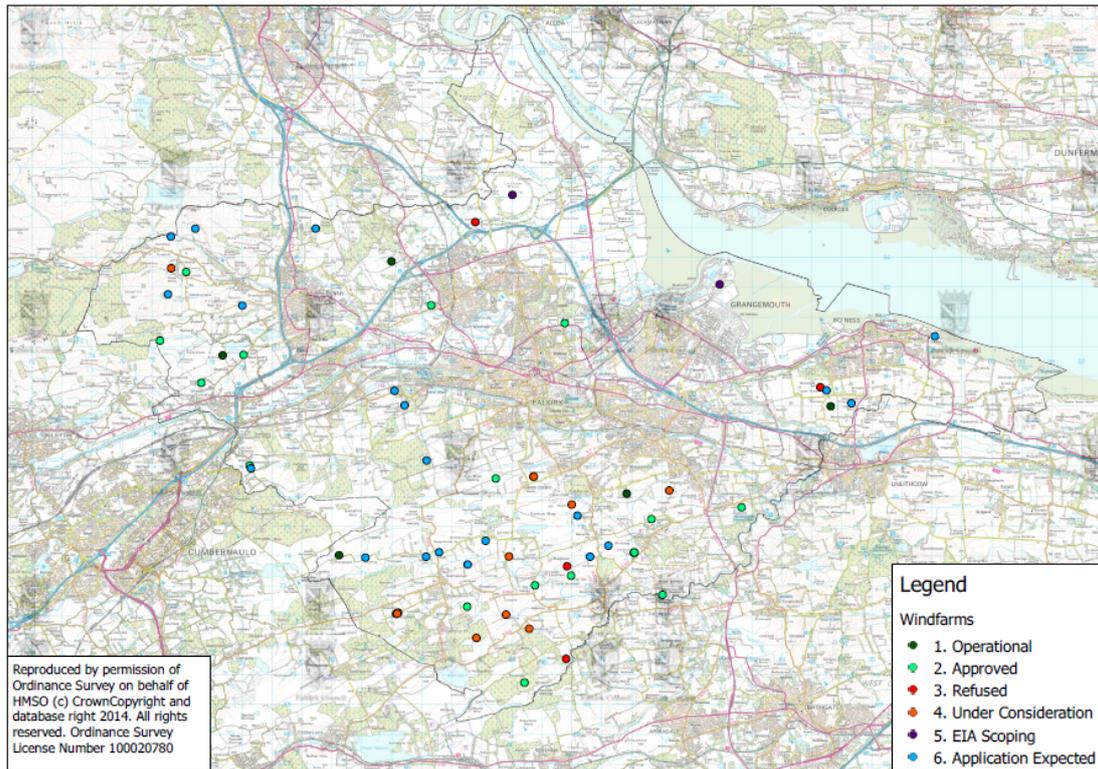
Falkirk Council Area

The Falkirk Council area extends to some 300 sq. km. and is located in the middle of Scotland's Central Belt. Despite its relatively small geographical extent, the area exhibits a considerable variety of landforms and habitats. This is in turn influenced by the its underlying geology, comprising mainly sedimentary rocks from the Carboniferous period, and the effects of glaciation, which deposited a range of drift materials and a characteristic landscape of mounds, ridges, terraces and raised beaches.

The northern part is characterised by the relatively flat and fertile carseland adjoining the Forth Estuary, supporting arable farming and some improved pasture. The adjacent estuarine mudflats and salt marsh form part of the Firth of Forth SPA, which is of international importance for wintering birds. To the east a rolling landscape of good quality agricultural land is bisected by the scenic Avon Valley. The centre of the area, which is dominated by the river valleys of the Carron and the Bonny Water, is the most urbanised, and is traversed by the Forth and Clyde and Union Canals. To the south and west, the land rises up to the more remote and less populous Slamannan Plateau and the Denny and Kilsyth Hills where rough grazing predominates with some commercial forestry.

The population of c.156,000 is focused within a network of small to medium sized towns. The principal town of Falkirk, with a population of around 38,000, is centrally located and serves as the main shopping, service and employment centre for the area. Separated from Falkirk by a narrow Green Belt are the urban areas of Larbert/Stenhousemuir, Polmont and Grangemouth. The former two are largely residential in character, whilst Grangemouth is home to the largest petrochemical complex in Scotland. In the western reaches of the area lie the settlements of Denny/Dunipace, Bonnybridge and Banknock, whilst to the east, overlooking the Forth, sits the town of Bo'ness. Some 18 smaller village communities are scattered across the rural part of the area.

There are currently 17 wind turbines operational within the Falkirk Council area with an estimated combined power rating of 13.12MW and an estimated annual energy output of 34.48GWh. 33 further turbines have been approved with a combined power rating of 31.34MW and an estimated annual energy output of 82.35GWh. There are planning applications pending consideration for a further 14 turbines. 10 turbines are at the EIA scoping stage and planning applications are either expected or have been recently refused or withdrawn for an additional 46 turbines. The map below summarises the situation:



Map: Wind Energy Developments in the Falkirk Council Area.

State of the Environment

Baseline environmental information for the Falkirk Council area is provided in the Environmental Baseline Report which forms Appendix 1 of this Environmental Report. The environmental baseline report summaries existing environmental issues; existing environmental characteristics; likely future changes to the environment without the implementation of the SG, current environmental protection objectives and how those objectives have been taken into account for 6 distinct environmental topic areas. The following environmental topics and sub topics have been scoped into the Environmental Report and a detailed further within the Environmental Baseline Report:

Environmental Topic Area	Environmental Sub-Topic	SEA Objectives	Assessment Questions
Biodiversity, Flora and Fauna	<ul style="list-style-type: none"> Designated Sites Ancient, Long Established and Natural Woodland 	<ul style="list-style-type: none"> Demonstrate no adverse effect on the integrity of Natura 2000 sites.. Protect and enhance Sites of Special Scientific Interest and Wildlife Sites Protect and enhance other locally designated sites of biodiversity value Protect ancient, long established and semi natural woodlands as a habitat resource of irreplaceable value 	<ul style="list-style-type: none"> Can it be demonstrated that the option will have no adverse effect on the integrity of Natura 2000 sites? Does the option protect and enhance SSSI and/or Wildlife Sites? Does the option protect and enhance locally designated sites of biodiversity value? Does the option protect ancient, long established and semi natural woodland?
Population and Human Health	<ul style="list-style-type: none"> Human Health Waste Peat 	<ul style="list-style-type: none"> Prevent risk to human health through increased impacts from ice throw and shadow flicker. Avoid increasing noise nuisance Avoid the increased production of waste peat 	<ul style="list-style-type: none"> Does the increase the risk to human health from ice throw and shadow flicker? Does the option increase noise nuisance? Does the option increase the production of waste peat?
Soil	<ul style="list-style-type: none"> Carbon Rich and Rare Soil 	<ul style="list-style-type: none"> Protect carbon rich soils and other rare soils 	<ul style="list-style-type: none"> Does the option protect carbon rich soils and other rare soils (basin peat, blanket bog, peat alluvium complex, peaty podzols, peaty gleys, podzols, humus iron podzols and saltings)? Does the option safeguard against the release of green house gasses and carbon from soils?
Material Assets	<ul style="list-style-type: none"> Wind Energy Generation 	<ul style="list-style-type: none"> Maximise the contribution that the Falkirk Council area makes towards meeting the Scottish Government's target of sourcing 100% of electricity demand from renewable energy generation by 2020. 	<ul style="list-style-type: none"> Does the option improve the ability of the Falkirk Council area to assist in meeting the Scottish Government's target of sourcing 100% of electricity demand from renewable energy generation by 2020?
Cultural Heritage	<ul style="list-style-type: none"> World Heritage Sites Scheduled ancient monuments Listed buildings Gardens and designed landscapes Historic Battlefields Conservation Areas 	<ul style="list-style-type: none"> Protect the historic environment. 	<ul style="list-style-type: none"> Will the Frontiers of the Roman Empire (Antonine Wall) World Heritage Site and/or its setting be adversely impacted? Will any scheduled monument and/or its setting be adversely impacted? Will any listed building and/or its setting be adversely impacted? Will the setting of a conservation area be adversely impacted? Will a Historic Garden or Designed Landscape and/or its setting be adversely impacted? Will any Historic Battlefield and/or its setting be adversely impacted?

<p>Landscape</p>	<ul style="list-style-type: none"> • Landscape Character • Special Landscape Areas • Green Belts • Areas of Visual Sensitivity 	<ul style="list-style-type: none"> • Protect the distinctive character of the landscape and ensure new wind energy development does not exceed the capacity of the landscape to accommodate it. • Ensure the strategic purpose of the greenbelt is not undermined. • Ensure that areas of visual sensitivity are protected from inappropriate development. 	<ul style="list-style-type: none"> • Does the option protect the distinctive character of the landscape? • Will the implementation of the option lead the capacity of the landscape being exceeded? • Does the option undermine the strategic purpose of the greenbelt? • Does the option protect areas of visual sensitivity from inappropriate development?
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Likely Significant Environmental Effects of the Spatial Framework for Wind Energy Development SPG

The likely significant environmental effect of implementing the preferred alternatives set out in the Consultative Draft SG is detailed below. Measures for mitigating the significant negative effects and ensuring the significant positive effects of implementing the preferred alternatives are set out within section 5 of the Environmental Report. The alternatives to the preferred approaches that were considered and their likely significant environmental effects are also set out within section 5 of the Environmental Report. Detailed matrices showing the assessment of the SG against the environmental objectives set out in the Environmental Baseline Report are included in appendix 2 of the Environmental Report.

Cumulative effect of implementation of the SG

Cumulatively the preferred alternatives within the SG will act to provide a level of protection to our existing environmental assets which ensure that no significant negative effects are caused to the vast majority of our environmental assets by wind energy development. The only exception to this is the landscape setting of settlements which may be significantly affected by wind energy developments within the community separation zones.

The SG will however act cumulatively to have a significant negative effect on the potential to generate energy from renewable sources across the Council area. The main reasons for this are because: the proposed community separation areas cover such a significant proportion of the Council area which has historically seen the majority of wind energy development applications; and the relatively conservative approach adopted to assessing the impact of wind energy developments on local landscape character.

The potential for significant negative effects on the landscape setting of settlements could be mitigated by defining the circumstances where windfarms within the defined community separation areas will be appropriate and calibrating this to a level where significant negative effects will be avoided.

The only way to mitigate the significant negative effect the SG will have on the potential to generate energy from renewable sources would be to adopt a much more permissive approach to the assessment of impacts on local landscape character by pursuing a landscape objective of protection in only those landscape character areas with low capacity to accommodate wind energy development. Doing this would cause significant negative effects on the distinctive character of the landscape.

Monitoring

Following adoption of the SG, the effects on the environment will need to be monitored. This will ensure that any unforeseen negative environmental effects are identified and appropriate action taken. Falkirk Council will determine a suitable monitoring framework with specific indicators in liaison with the Statutory Consultees. Appendix 3 of Environmental Report sets out the suggested monitoring framework.

Next Steps

Responses received to the Environmental Report will be analysed alongside consultation responses to the consultative draft SG. If necessary the SG will be modified to take into account views expressed in responses before the SPG is presented back to committee for adoption. Once adoption has taken place a SEA Post Adoption Statement will be issued and environmental monitoring will be agreed and implemented.

1.0 SPATIAL FRAMEWORK AND GUIDANCE FOR WIND ENERGY DEVELOPMENT – SUPPLEMENTARY GUIDANCE

1.1 Introduction

1.1.1 The purpose of the Spatial Framework and Guidance for Wind Energy Development Supplementary Guidance (SG) is:

- to provide guidance to developers and other key stakeholders on the key areas which require protection, those subject to constraint, and those where wind energy can potentially be accommodated; and
- to provide guidance against which planning applications for wind turbine proposals can be assessed.

1.1.2 The SG will be considered to be part of the Development Plan in the determination of such applications.

Table 1: Key Facts

Name of Responsible Authority	Falkirk Council
Reason for PPS	Scottish Planning Policy (SPP) requires planning authorities to set out in the development plan a spatial framework identifying those areas that are likely to be most appropriate for onshore wind farms as a guide for developers and communities.
Plan Subject	Wind Energy Development/ Land Use Planning
Period Covered by Plan	The SG will last from adoption of the LDP until it is reviewed as part of LDP2.
Frequency of Updates	Updates to the LDP and associated SG are planned at 5 year intervals.
Plan Area	The Falkirk Council Administrative Area
Plan Purpose	to provide guidance to developers and other key stakeholders on the key areas which require protection, those subject to constraint, and those where wind energy can potentially be accommodated; and to provide guidance against which planning applications for wind turbine proposals can be assessed.
Key Contact	Danny Thallon Planning Officer Falkirk Council Development Services Abbotsford House, David's Loan, Falkirk. FK2 7YZ Tel:01324 504927 Email: danny.thallon@falkirk.gov.uk

2.0 STRATEGIC ENVIRONMENTAL ASSESSMENT METHODOLOGY

2.1 Introduction

2.1.1 A Strategic Environmental Assessment is required under the Environmental Assessment (Scotland) Act 2005 to assess the likely significance of environmental effects of the SPG.

2.1.2 The Environmental Report follows the guidance from the Scottish Government on undertaking SEA:

- Environmental Assessment (Scotland) Act 2005
- Scottish Executive SEA Toolkit, September 2006

2.1.3 The SEA Environmental Report has been produced by Falkirk Council.

2.2 SEA Stages

2.2.1 There are a number of stages of SEA as shown in Table 2 below:

Table 2: SEA Stages and Progress

SEA Stage	SEA Process	Progress
Screening	Screening report submitted to the SEA Gateway. Determination of the requirement of SEA by Responsible Authority.	A Screening Report was sent to the SEA Gateway on 28.05.14
Determination	Determination is made by the Responsible Authority as to the likelihood of significant environmental effects occurring	A Screening Determination was made on 20.11.14 and a notice was advertised in the Falkirk Herald
Scoping	Identification of the environmental issues to be addressed, the scope and the level of detail required for presentation within the scoping report.	Scoping Report submitted to the SEA Gateway on 17.09.14
Scoping Consultation	The Consultation Authorities (CA's) advise on the scope of the Environmental Report. At this stage the timescale for consultation on the Environmental Report following receipt of consultation responses is determined.	Responses to Scoping Report received from Consultation Authorities on 22.10.14
Environmental Report	The Consultative Draft SG is assessed against the SEA	This report, submitted to the SEA

	Objectives. Assessment of alternatives to the preferred options are also assessed. Requirements for mitigation and monitoring are reported.	Gateway alongside the consultative draft SG.
Environmental Report Consultation	The Consultation Authorities will provide a response on the Environmental Report via the SEA Gateway within 7 weeks of receipt. The CA's will advise on the content of the Environmental Report and the acceptability of the approach set out in the consultative draft SG. This consultation includes public consultation.	To follow
Post-Adoption SEA Statement	The SEA Statement summarises the assessment of the SG and how the consultation responses have been taken into account.	To Follow
Mitigation and Monitoring	Following adoption, Falkirk Council will be responsible for monitoring the implementation of the SG.	To Follow

3.0 RELATIONSHIP WITH OTHER PLANS, PROGRAMMES AND STRATEGIES

3.1 Legislative Influences

The Habitats Regulations

3.1.1 Article 6(3) of the EC Habitats Directive requires that any plan (or project), which is not directly connected with or necessary to the management of a European site, but would be likely to have a significant effect on such a site, either individually or in combination with other plans or projects, shall be subject to an 'appropriate assessment' of its implications for the European site in view of the site's conservation objectives. The plan-making body shall agree to the plan only after having ascertained that it will not adversely affect the integrity of the site concerned, unless in exceptional circumstances, the provisions of Article 6(4) are met.

3.1.2 This procedure is applied in Scotland through The Conservation (Natural Habitats, &c.) Regulations 1994 (as amended), and is known as the 'Habitats Regulations Appraisal' of plans.

The Climate Change (Scotland) Act 2009

3.1.3 Under this Act, Local Authorities must ensure that they act in the way best calculated to contribute to the delivery of greenhouse gas emissions reduction targets, in the way best calculated to help deliver any statutory climate change adaptation programme, and in a way that it considers most sustainable.

Wildlife and Environment (Scotland) Act 2011

3.1.4 The purpose of the Wildlife and Natural Environment (Scotland) Act was to make the law on wildlife and the natural environment more efficient, effective and proportionate. The Act introduces the power to issue restoration notices requiring action to be taken by the responsible party to restore damage to a SSSI.

3.2 National Policy

The Government Economic Strategy

3.2.1 The Government Economic Strategy establishes a new Strategic Priority: "Transition to a Low Carbon Economy" to reflect the opportunity to place Scotland in an advantageous position within the global economy and ensure that the benefits of this transformational change are shared across the economy and all our communities. It builds on the Low Carbon Economic Strategy, which highlights the economic opportunities and the role of government in supporting this fundamental transformation of Scotland's economy.

3.2.2 In line with these changes, the Scottish Government has set itself the target of the equivalent to 100% of Scotland's demand for electricity to be met by renewables by 2020

3.2.3 It should be noted that The Scottish Government has considered the requirement for strategic environmental assessment of The Government Economic Strategy. A pre-screening exercise concluded that the Strategy itself - as a publication to provide an overarching framework - will have no or minimal environmental effects. However, it recognised that many of the proposals set out within it could have environmental implications when they are developed into more specific policies and actions.

Renewables Action Plan

3.2.4 Specific actions of the Renewables Action Plan were to create a supportive planning landscape and to ensure that the planning and consenting regimes better support investment in renewables in Scotland.

Scottish Planning Policy

3.2.5 Scottish Planning Policy requires planning authorities to set out in the development plan: a spatial framework identifying those areas that are likely to be most appropriate for onshore wind farms; an indication of the minimum scale of onshore wind development that the spatial framework is intended to apply to; and criteria that will be considered in deciding all applications for wind farms of different scales. It indicates that spatial frameworks should identify:

- Areas where wind farms will not be acceptable;
- Areas of significant protection where wind farms may be appropriate in some circumstances where significant effects on the qualities of these areas can be substantially overcome by siting, design or other mitigation; and
- Areas with potential for wind farm development where wind farms are likely to be acceptable, subject to detailed consideration against identified policy criteria.

3.2.6 SPP identifies at table 3 where different designations of land fit within this hierarchy and is reproduced below:

Table 3: Spatial Frameworks (Reproduced from SPP)

<p>Group 1: Areas where wind farms will not be acceptable:</p> <p>National Parks and National Scenic Areas.</p>
<p>Group 2: Areas of significant protection:</p> <p>Recognising the need for significant protection, in these areas wind farms may be appropriate in some circumstances. Further consideration will be required to demonstrate that any significant effects on the qualities of these areas can be substantially overcome by siting, design or other mitigation.</p>

<p>National and international designations:</p> <ul style="list-style-type: none"> • World Heritage Sites; • Natura 2000 and Ramsar sites; • Sites of Special Scientific Interest; • National Nature Reserves; • Sites identified in the Inventory of Gardens and Designed Landscapes; • Sites identified in the Inventory of Historic Battlefields. 	<p>Other nationally important environmental interests:</p> <ul style="list-style-type: none"> • areas of wild land as shown on the 2014 SNH map of wild land areas; • carbon rich soils, deep peat and priority peatland habitat. 	<p>Community separation for consideration of visual impact:</p> <ul style="list-style-type: none"> • an area not exceeding 2km around cities, towns and villages identified on the local development plan with an identified settlement envelope or edge. The extent of the area will be determined by the planning authority based on landform and other features which restrict views out from the settlement.
<p>Group 3: Areas with potential for wind farm development:</p> <p>Beyond groups 1 and 2, wind farms are likely to be acceptable, subject to detailed consideration against identified policy criteria.</p>		

Scottish Historic Environmental Policy

3.2.9 The Scottish Historic Environment Policy (SHEP) document sets out Scottish Ministers’ policies for the historic environment, and provides a framework that informs the day-to-day work of a range of organisations that have a role and interest in managing the historic environment.

Planning Advice Note (PAN) 45

3.2.10 PAN 45 Renewable Energy Technologies and Annex 2 Spatial Frameworks and Supplementary Planning Guidance for Wind Farms has been replaced with web based renewables advice which will be regularly updated. This includes a suggested approach for preparing spatial frameworks for wind farms

Zero Waste Plan 2010

3.2.11 The Zero Waste Plan proposes long term targets of recycling 70% of all Scotland's waste, and only 5% of remaining waste ending up in landfill by 2025. Dependant on their location Wind Energy Developments can generate large amounts of waste peat. The SG will have a role to play in avoiding the generation of waste peat through directing wind energy developments away from areas of carbon rich soil.

Other non statutory guidance

3.2.12 A range of non-statutory guidance has been prepared by SNH:

- Wildness in Scotland's Countryside
- Visual Assessment of Windfarms: Best Practice (2002)
- Strategic Locational Guidance for Onshore Wind Farms in Respect of the Natural Heritage – Policy Statement June 2002
- Siting and Designing Wind Farms in the Landscape (Version 2, May 2014)
- Assessing the Impact of Small-Scale Wind Energy Proposals on the Natural Heritage (Version 2, June 2014).
- Assessing the Cumulative Impact of Onshore Wind Energy Developments (March 2012)

3.2.13 And others:

- RSPB Research Report No. 20 (in association with SNH)(2006). Mapping at tetrad resolution of sensitivity relative to conservation of certain bird species.
- Managing Change in the Historic Environment Guidance Note on Setting. (Historic Scotland)
- SEPA Guidance Note 4 - Planning guidance on windfarm developments
- Guidance on the Assessment of Peat Volumes, Reuse of Excavated Peat and Minimisation of Waste (SEPA)
- Regulatory Position Statement – Developments on Peat. (SEPA)
- Developments on Peatland: Site Surveys and Best Practice (SEPA)
- Good Practice During Windfarm Construction (Scottish Renewables, Scottish Natural Heritage, SEPA, the Forestry Commission Scotland and Historic Scotland.)

3.3 Local Policy

Falkirk Local Development Plan

3.3.1 The Falkirk Local Development Plan (LDP) sets out a supportive policy framework for renewable energy within Policy RW01, and provides the immediate context and development plan 'hook' for this Supplementary Guidance as follows:

Policy RW01 Renewable Energy

1. Renewable energy developments will be supported subject to satisfactory assessment of their impacts on the environment and communities.
2. Wind energy developments will be assessed in relation to the following factors, and the associated detailed guidance contained in Supplementary

Guidance SG14 ‘Spatial Framework and Guidance for Wind Energy Developments:

- Landscape and visual impacts;
- Ecological impacts;
- Impact on green belt objectives;
- Impact on carbon rich and rare soils;
- Impact on the water environment;
- Impacts on the historic environment;
- Impacts on aviation and telecommunications interests;
- Impacts on communities, whether settlements or individual residential properties, including issues of noise, shadow flicker and air quality; and
- Cumulative impacts in relation to the above factors, arising from the combined effect of the proposal with other existing or approved wind energy developments.

Planning Policy Framework for Neighbouring Areas

3.3.2 Some impacts associated with large turbines, especially visual and landscape impacts, may be experienced in other areas out with the bounds of the plan area. These other Neighbouring Planning Authorities either have established Development Plan policies or are also preparing/reviewing Supplementary Guidance for renewables developments in their areas. Table 4 below summarises the planning policy framework for wind energy development. These policies will have a bearing on the assessment of cumulative environmental impacts. The neighbouring Authorities will be consulted on the draft SG.

Table 4: Planning policy framework for neighbouring areas

<i>Other Neighbouring Planning Authorities</i>	Development Plan and other policies (some authorities also reviewing policies and/or preparing Supplementary Planning Guidance):
Fife	Fife Council’s Supplementary Planning Guidance on Wind Energy published in 2013 identifies broad areas of search for windfarms over 20 megawatts indicating areas with highest potential capacity and areas with highest potential capacity. The SPG indicates that there are no areas where all environmental and cumulative impacts can be satisfactorily addressed. This SPG does not comply with the spatial framework set out in SPP

Clackmannanshire	Clackmannanshire Council published Supplementary Guidance 2 Onshore Wind Energy in 2013. This SPG does not comply with the spatial framework set out in SPP. This SG has not been able to identify any areas of search for medium and large scale turbine typologies (51m+ to tip) but has been able to identify areas of search for small turbine typologies (20-50m to tip)
Stirling	In March 2011 Stirling Council adopted “Interim Locational Policy & Guidance for Renewable Energy Developments (Wind Turbines)” with the intention this would then form Supplementary Guidance associated with the forthcoming Local Development Plan (LDP). This was then incorporated into Proposed SG33 “Wind Farms and Wind Turbines”
Glasgow and the Clyde Valley Strategic Development Plan	The Glasgow Clyde Valley Structure Plan identifies a broad area of search adjacent to the Falkirk Council boundary to the south of the Black Loch to the south of Limerigg. This may need to be revisited in light of the revised SPP published in June 2014.
North Lanarkshire	North Lanarkshire Council have produced a Wind Turbine Development SPG in March 2012. This SPG identifies land adjacent to the Falkirk Council area from the south of Castlecary to the southern tip of the Council area as a “zone 2” area of search where single turbines of above 40m or clusters of up to 5 turbines below 40m may be appropriate. This may need to be revisited in light of the revised SPP published in June 2014.
West Lothian	Policies NWR20-27 set out the Council’s requirements in relation to wind farm development. Policy NWR29 indicates that the only preferred areas for windfarm developments is at Woodmuir plantation and Pates Hill (south of Breich and west of Addiewell to Cobbinshaw Road). West Lothian Council are currently in the process of producing a spatial framework for wind energy development.

Falkirk Area Biodiversity Plan 2010 -2013

3.3.3 The Falkirk Area Biodiversity Action Plan (FABAP) groups the twenty priority habitats for targeted action identified in the 2002 version of the FABAP and groups them into six broad habitat action plan areas. Within each of these six areas, the FABAP identifies a number of projects to be undertaken over the three year timeframe of the plan. These projects were selected to benefit

at least some of the priority habitats and species which sit within the particular habitat action plan.

4.0 ENVIRONMENTAL BASELINE

4.1 Legislative Requirement

4.1.1 Schedule 3 subsection 2-5 of the Environmental Assessment (Scotland) Act 2005 requires that the Environmental Report includes a description of:

- The current state of the environment and environmental characteristics of areas likely to be significantly affected by the SG;
- The likely evolution of the environment without the implementation of the SG;
- Any existing environmental problems which are relevant to the SG;
- The environmental protection objectives which are relevant to the SG; and
- The way those objectives have been taken into account during the preparation of the SG

4.2 Approach to the Description of the Environmental Baseline

4.2.1 The Scoping Report for the SG indicated the environmental topic areas which were proposed to be scoped into the Environmental Report. Following feedback from the Consultation Authorities, the scope of the Environmental Report has been confirmed. Table 5 below summarises the topics and sub topics which have been scoped into the Environmental Report:

Table 5: Topics scoped into the Environmental Report

Topic	Sub Topics
Biodiversity	Designated Sites Ancient, Long Established and Semi-Natural Woodland
Population and Human Health	Human Health Waste Peat
Soil	Carbon Rich and Rare Soil
Material Assets	Wind Energy Generation
Cultural Heritage	World Heritage Sites Scheduled Ancient Monuments Listed Buildings Historic Gardens and Designated Landscapes Historic Battlefields Conservation Areas
Landscape	Landscape Character Special Landscape Areas Green Belts Areas of Visual Sensitivity

4.2.2 It should be noted that greenhouse gas emissions have been scoped out of the environmental report. It is acknowledged that switching to

renewable forms of energy generation from fossil fuel burning forms of energy generation is likely to be one of the most effective ways of reducing the amount of greenhouse gasses released into the atmosphere.

4.2.3 The spatial framework advanced as part of the SG will have a limited influence over the likelihood of wind energy developments being approved as Scottish Planning Policy already dictates the vast majority of the areas where:

- wind farms will not be acceptable;
- wind farms may be appropriate in some circumstances; and
- wind farms are likely to be acceptable, subject to detailed consideration against identified policy criteria.

4.2.4 In the main policy criteria referred to in the 3rd bullet point above have been set out in the LDP, the one exception to this being in relation to areas of local landscape character. Over and above this the SG will be able to define a community separation zone of up to 2km around towns and villages identified in the LDP for the consideration of visual impact.

4.2.5 Even if the little scope that the SG retains to influence the amount of wind energy development which is acceptable in the Council area enabled Falkirk to meet 100% of its electricity demand from renewable sources, this would only represent less than 2% of CO₂ emissions from electricity generation across Scotland, as such it is not considered likely that the SG will have a significant effect on greenhouse gas emissions from energy generation and therefore greenhouse gas emissions from energy generation have not been scoped into the Environmental Report.

4.2.6 Given the broad and comprehensive scope of the Environmental Report, it was been decided to deal with the environmental baseline for each environmental topic area within a specific chapter of a separate Environmental Baseline Report which forms appendix 1 of this Environmental Report. Each chapter of the environmental baseline report will be structured with the following sub-sections:

1. Existing Environmental Issues
2. Existing Environmental Characteristics
3. Likely Future Changes without the Implementation of the Plan
4. Current Environmental Protection Objectives
5. How Objectives Have Been Taken into Account

4.2.7 A general overview of the environment in the Falkirk Area and a broad indication of the likely future changes to environment without the plan are given in section 4.3 below.

4.3 General Overview of the Environment

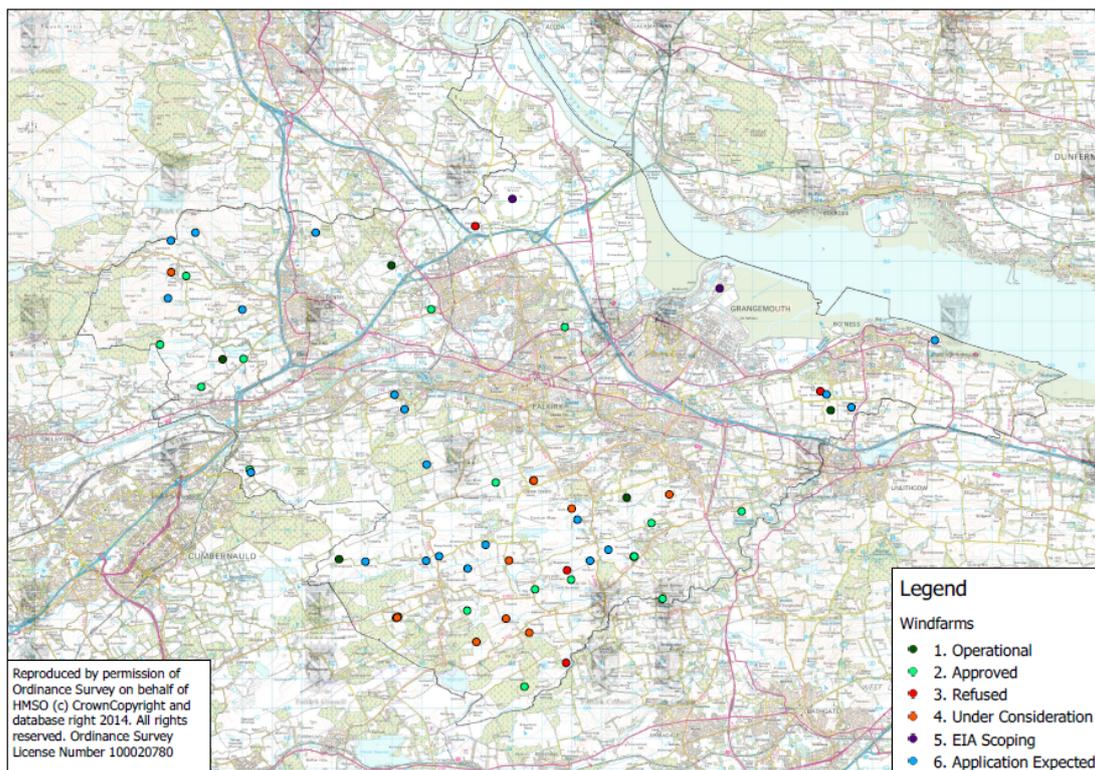
4.3.1 The Falkirk Council area extends to some 300 sq. km. and is located in the middle of Scotland's Central Belt. Despite its relatively small geographical extent, the area exhibits a considerable variety of landforms and habitats. This

is in turn influenced by the its underlying geology, comprising mainly sedimentary rocks from the Carboniferous period, and the effects of glaciation, which deposited a range of drift materials and a characteristic landscape of mounds, ridges, terraces and raised beaches.

4.3.2 The northern part is characterised by the relatively flat and fertile carseland adjoining the Forth Estuary, supporting arable farming and some improved pasture. The adjacent estuarine mudflats and salt marsh form part of the Firth of Forth SPA, which is of international importance for wintering birds. To the east a rolling landscape of good quality agricultural land is bisected by the scenic Avon Valley. The centre of the area, which is dominated by the river valleys of the Carron and the Bonny Water, is the most urbanised, and is traversed by the Forth and Clyde and Union Canals. To the south and west, the land rises up to the more remote and less populous Slamannan Plateau and the Denny and Kilsyth Hills where rough grazing predominates with some commercial forestry.

4.3.3 The population of c.156,000 is focused within a network of small to medium sized towns. The principal town of Falkirk, with a population of around 38,000, is centrally located and serves as the main shopping, service and employment centre for the area. Separated from Falkirk by a narrow Green Belt are the urban areas of Larbert/Stenhousemuir, Polmont and Grangemouth. The former two are largely residential in character, whilst Grangemouth is home to the largest petrochemical complex in Scotland. In the western reaches of the area lie the settlements of Denny/Dunipace, Bonnybridge and Banknock, whilst to the east, overlooking the Forth, sits the town of Bo'ness. Some 18 smaller village communities are scattered across the rural part of the area.

4.3.4 There are currently 17 wind turbines operational within the Falkirk Council area with an estimated combined power rating of 13.12MW and an estimated annual energy output of 34.48GWh. 33 further turbines have been approved with a combined power rating of 31.34MW and an estimated annual energy output of 82.35GWh. There are planning applications pending consideration for a further 14 turbines. 10 turbines are at the EIA scoping stage and planning applications are either expected or have been recently refused or withdrawn for an additional 46 turbines. The map below summarises the situation:



Map 1: Wind Energy Developments in the Falkirk Council Area.

4.4 Summary of likely future changes to environment without the plan

4.4.1 The logic of carrying out Strategic Environmental Assessment is to understand the likely environmental effects of the implementation of the plan. However, the Directive also seeks examination of how the environment is likely to evolve without adoption and implementation of the SPG.

4.4.2 In the absence the SG, planning applications for wind energy developments would continue to be determined against criteria based policies contained within the Development Plan. Although this is unlikely to lead to significant environmental effects from wind energy developments, the opportunity to provide greater clarity to the development industry about the constraints to wind energy development which exist within the Council area would be lost, therefore the opportunity to maximise renewable energy potential through minimising wasted effort and resources on inappropriately located proposals would also be lost.

5.0 Environmental Assessment

5.1 Scope

5.1.1 The implementation of the SG has the potential to have significant environmental effects on many areas of the environment. A breakdown of sub-issues to be scoped in and scoped out of each topic was given within the Scoping Report (September 2014). A record how the views of the Consultation Authorities at the scoping stage have been taken into account is included at Appendix 4 of this document. Table 5 above shows the topics and sub topics which have been scoped into the Environmental Report.

5.2 Summary of the proposed level of detail

5.2.1 The scope of environmental assessment will be limited to the policy choices which are actually being made by the SG itself. In the main, the criteria that will be considered in deciding all applications for wind farms of different scales will be drawn directly from policies within the LDP. As the LDP has already been through a process of SEA and reasonable alternatives to its policies identified and assessed, there is no merit in duplicating effort within this SG, particularly as policy choices cannot be altered.

5.2.2 Environmental assessment will therefore be focused on the environmental effects of the policy choices the SG itself has to make. These are as follows:

- The minimum scale of onshore wind development that the spatial framework is intended to apply to;
- The size of separation zone around the towns and villages identified within the LDP which will be defined as an area of significant protection within which visual impact will be considered;
- The criteria set out in the guidance that will be considered when deciding if a development is necessary to meet a local or national need
- The criteria set out in the guidance that will be considered in deciding applications for wind farms of different scales within this separation zone; and
- The criteria set out in the guidance that will be considered in deciding applications for wind farms of different scales within the different landscape character areas and special landscape areas across the Council area.

5.2.3 Three reasonable alternatives will be explored in the Environmental Report for each of the above policy choices i.e. permissive, balanced and conservative.

5.3 Assessment Method Summary

5.3.1 A set of SEA objectives have been formulated for each environmental topic area and are reported in the corresponding section of the Environmental Baseline Report (Appendix 1 of this document).

5.3.2 The proposed approach to assessment will be to ask specific questions of each alternative which relate to the SEA objectives set out in the Environmental Baseline Report, then consider how each will be likely to perform and how they can be altered to enhance performance.

5.3.3 After detailed consideration has been given to the magnitude of likely environmental effects, mitigation measures will be suggested in an attempt to reduce potential negative environmental effects. Mitigation may extend to recommending that the alternative is not selected as a preferred option.

5.3.4 A detailed assessment matrix is presented in appendix 2 detailing the effect that the implementation of each alternative will have on each environmental topic together with an explanation of how significant environmental effects have been discerned from non significant environmental effects. This will be for illustrative purposes only, as the aim of the assessment process is to inform the selection of preferred options to enhance environmental performance rather than to complete a box ticking exercise. The detailed assessment matrix demonstrated the rigorous and systematic process applied to identifying the environmental effects of the implementation of preferred approaches set out in the Consultative Draft SG and their reasonable alternatives.

5.4 Assessment of Significant Environmental Effects

5.4.1 The SG sets out the preferred alternative to the protection of different types of environmental asset. For each environmental asset, the preferred alternative sets out the level of protection to be afforded to it. The Environmental Report assesses the environmental effect of the proposed level of protection afforded to each environmental asset. In addition to the preferred alternative set out in the consultative draft SG, alternative scenarios detailing different levels of protection to each environmental asset have been subject to environmental assessment to show what effect they would have on the environment. Results are presented below:

Scale of wind energy developments to which the spatial framework applies

5.4.2 The preferred alternative: The preferred alternative is for the more permissive policy context of spatial framework to apply to wind energy developments of over 50m to blade tip and for wind energy developments of under 50m to blade tip to be assessed on their own merits against the criteria set out in the guidance for wind energy development set out in the SG.

5.4.3 Environmental assessment of the preferred alternative: Wind turbines above 50m to blade tip account for 43.5% of the total number of wind turbines which have been considered through the planning process in the Council area and account for 94% of the total power output.

5.4.4 This alternative will ensure that the following significant negative environmental effects are reduced to non significant levels:

- adverse impacts on Natura 2000 site supporting habitats;

- adverse impacts on local nature conservation sites;
- adverse impacts on human health caused by to ice throw, nuisance noise and shadow flicker;
- increased generation of waste peat; and
- adverse impacts on carbon rich and rare soil are reduced to a non-significant level.

5.4.5 It is predicted that this alternative will cause significant negative effects due to:

- adverse impacts on the setting of the Antonine Wall WHS;
- adverse impacts on scheduled ancient monuments, listed buildings and conservation areas and their setting;
- adverse impacts on the distinctive character of the landscape;
- breaching the capacity of the landscape to accommodate development;
- undermining the strategic purpose of the greenbelt; and
- adversely affecting areas of visual sensitivity.

5.4.6 This alternative will also have a significant positive effect on the environment through increasing the potential to generate energy from renewable sources

5.4.7 Enhancement/Mitigation: Setting the scale threshold at a higher level should be considered, this would further reduce the proportion of wind energy development applications which were subject to the more permissive policy environment of the spatial framework and mitigate negative effects. Setting the scale threshold at a level of 70m to blade tip would achieve this without reducing the significance of positive effects from increased potential to generate energy from renewable sources.

5.4.8 Significant negative effects on cultural heritage assets can be mitigated through application of criteria set out in policies D07; D08; D09 and D10 of the LDP.

5.4.9 The only way of reducing the significance of negative effects on landscape assets would be to set the scale threshold at a height which was above that of the vast majority of wind turbine development applications. Doing this would significantly reduce the potential to generate energy from renewable sources so is not recommended.

5.4.10 Developing guidance for wind energy development and setting out the detailed criteria which wind energy development will be subject to will help to further mitigate negative environmental effects, however, in developing that guidance care will be needed to ensure that it does not depart from the general guidance of the spatial framework i.e. wind energy developments may be appropriate in some circumstances in group 2 areas and wind energy developments are likely to be acceptable subject to detailed consideration against identified policy criteria in group 3 areas.

5.4.11 Alternatives Considered: The first alternative considered is for the spatial framework to apply to wind energy developments of over 30m. The second alternative considered is for the spatial framework to apply to wind energy developments of over 100m.

5.4.12 Environmental assessment of alternatives: Wind turbines above 30m to blade tip account for 71.7% of the total number of wind turbines which have been considered through the planning process in the Council area and account for 99.3% of the total power output.

5.4.13 Due to the increased number of wind turbines which would be considered under the more permissive policy environment of the spatial framework, it is predicted that this alternative will cause significant negative effects due to:

- adverse impacts on Natura 2000 site supporting habitats;
- adverse impacts on local nature conservation sites;
- adverse impacts on human health caused by ice throw, nuisance noise and shadow flicker;
- increased generation of waste peat; and
- adverse impacts on carbon rich and rare soil are reduced to a non-significant level.
- adverse impacts on the setting of the Antonine Wall WHS;
- adverse impacts on scheduled ancient monuments, listed buildings and conservation areas and their setting;
- adverse impacts on the distinctive character of the landscape;
- breaching the capacity of the landscape to accommodate development;
- undermining the strategic purpose of the greenbelt; and
- adversely affecting areas of visual sensitivity.

5.4.14 This alternative will also have significant positive effects on the environment through increasing the potential to generate energy from renewable sources, but this effect is only marginally greater than the preferred alternative above as smaller wind turbines generally have a much smaller power output than larger ones.

5.4.15 Wind turbines above 100m to blade tip account for 31.5% of the total number of wind turbines which have been considered through the planning process in the Council area and account for 85.6% of the total power output.

5.4.16 This alternative will further reduce the magnitude of the following negative environmental effects:

- adverse impacts on Natura 2000 site supporting habitats;
- adverse impacts on local nature conservation sites;
- adverse impacts on human health caused by ice throw, nuisance noise and shadow flicker;
- increased generation of waste peat; and
- adverse impacts on carbon rich and rare soil are reduced to a non-significant level.

5.4.17 The following effects will remain significant as taller turbines tend to have a greater impact on the setting of cultural heritage features and the distinctive character of the landscape:

- adverse impacts on the setting of the Antonine Wall WHS;
- adverse impacts on scheduled ancient monuments, listed buildings and conservation areas and their setting;
- adverse impacts on the distinctive character of the landscape;
- breaching the capacity of the landscape to accommodate development;
- undermining the strategic purpose of the greenbelt; and
- adversely affecting areas of visual sensitivity.

5.4.18 There is a risk that this alternative could reduce the significance of positive environmental effects through increasing the potential to generate energy from renewable sources as the percentage of the total power output of wind turbines already considered through the planning system in the Council area which the more permissive policy environment of the spatial framework would have applied to would drop below 90%.

Community separation distance

5.4.19 The preferred alternative: The preferred alternative is to set the community separation distance based on an assessment of landform and other features which restrict views out from each settlement. This has resulted in the following separation zones:

- 2km - Falkirk, Larbert, Stenhousemuir, Skinflats, Torwood, Denny, Bonnybridge, Banknock, Laurieston, Polmont, Maddiston, Bo'ness, Muirhouses, Blackness, Airth, Letham, Dumore, South Alloa, and north of Slamannan;
- 1.5km - Whitecross and the Loan; and
- 1km – Grangemouth, Shieldhill, California, Standburn, Avonbridge, Limerigg, and east, west and south of Slamannan.

5.4.20 Environmental Assessment of the preferred alternative: 71.1% of wind energy development applications within the Falkirk Council area which have been considered through the planning process are within these proposed separation areas which are considered by the spatial framework to be areas of significant protection where wind farms may be appropriate in some circumstances.

5.4.21 Given the historic pattern of wind energy development applications in the Council area this alternative would have a significant negative effect through restricting the potential for energy generation from renewable sources, however the following significant negative effects would be avoided:

- adverse impacts on the setting of listed buildings and conservation areas;
- exposing areas of visual sensitivity to inappropriate development; and

- undermining the strategic purpose of the greenbelt through adversely impacting on the landscape setting of settlements.

5.4.22 Enhancement/Mitigation: Restriction of the potential for energy generation from renewable sources could be reduced through careful definition of the criteria to be applied to wind energy developments within the defined community separation zones.

5.4.23 Alternatives Considered: The first alternative considered is to have no community separation distance. The second alternative considered was to have a 2km separation distance from all settlement boundaries.

5.4.24 Environmental assessment of alternatives: Having no community separation distance would be likely to cause significant negative effects through:

- adverse impacts on the setting of listed buildings and conservation areas;
- exposing areas of visual sensitivity to inappropriate development; and
- undermining the strategic purpose of the greenbelt through adversely impacting on the landscape setting of settlements.

5.4.25 Given that community separation distances are specifically referenced in the SPP spatial framework it could be argued that not having community separation distances is an unreasonable alternative.

5.4.26 78.9% of wind energy development applications within the Falkirk Council area which have been considered through the planning process are within a 2km separation area.

5.4.27 In comparison to the preferred alternative this alternative would have a slightly greater significant negative effect through restricting the potential for energy generation from renewable sources.

Definition of “Overriding Local or National Need” and “Economic Benefits of Substantial Local Importance”

5.4.28 There are two policy areas where LDP policy is more restrictive than the approach set out in the spatial framework:

1. The spatial framework indicates that wind energy developments affecting locally designated nature conservation sites are “likely to be acceptable subject to detailed consideration against identified policy criteria”. Whereas policy GN03 of the LDP indicates that development “will not be permitted unless it can be demonstrated that the overall integrity of the site, habitat or species is not compromised, or any adverse effects are clearly outweighed by economic benefits of substantial local importance”; and

2. The spatial framework indicates that: carbon rich soils are areas of significant protection where wind farms “may be appropriate in some circumstances” where “significant effects ... can be substantially overcome by

siting, design, or other mitigation.” ; and wind energy developments affecting rare soils are “likely to be acceptable subject to detailed consideration against identified policy criteria”. Whereas policy RW04 of the LDP indicates that development affecting carbon rich or rare soils “will not be permitted unless...development of the site is necessary to meet an overriding local or national need where no other suitable site is available.”

5.4.29 The SG therefore has the role of deciphering this policy confusion to clarify how wind energy developments which affect locally designated nature conservation sites or carbon rich or rare soil will be determined.

5.4.30 The preferred alternative: The preferred alternative is for LDP policy to always take precedence despite the wording of the spatial framework in SPP but to clarify that community benefits over and above contributions meeting the policy tests of Circular 1/2010 and signpost that SPP considers that: net economic impact, including local and community socio-economic benefits such as employment, associated business and supply chain opportunities; and the scale of contribution to renewable energy generation targets are material considerations in any decision.

5.4.31 Environmental assessment of the preferred alternative: The effects of applying policies GN03 and RW04 of the LDP have been previously assessed in the Revised Environmental Report of the LDP. It indicates that these policies would reduce the frequency of the following significant negative effects but would not prevent them from occurring:

- Adverse effects on locally designated sites and protected species; and
- Loss of carbon rich and rare soil.

5.4.32 Cumulatively Wildlife Sites, Sites of Importance for Nature Conservation, Local Nature Reserves, carbon rich soils and other rare soils cover approximately 21% of the Council area. This alternative would apply a more restrictive policy approach to wind energy development applications in these areas, however, as the terms “*economic benefits of substantial local importance*” and “*development necessary to meet an overriding local or national need*” have not been defined in the LDP or this SG the reduction in the potential for wind energy development caused by implementing this alternative cannot be accurately predicted.

5.4.33 Enhancement/ mitigation: The SG should define the terms: “economic benefits of substantial local importance”; and “development necessary to meet an overriding local or national need.” A tight definition of these terms could reduce the magnitude of predicted negative effects

5.4.34 Alternatives considered: The first alternative considered is for the SG to indicate that wind turbines which the spatial framework applies to (above 50m to blade tip in the preferred alternative) are automatically considered to constitute “*economic benefits of substantial local importance*” and “*development necessary to meet an overriding local or national need*”.

5.4.35 The second alternative considered is for only wind energy developments of above 50MW to be considered to have “economic benefits of substantial local importance” and be a “development necessary to meet an overriding local or national need”.

5.4.36 Environmental assessment of alternatives: Applying the first alternative would create a more permissive policy environment for wind energy development applications above the spatial framework threshold on approximately 21% of the Council area which would increase the potential for energy generation from renewable sources.

5.4.37 Applying this alternative would also increase the frequency of significant negative environmental effects due to:

- Adverse effects on locally designated sites and protected species; and
- Loss of carbon rich and rare soil.

5.4.38 Applying the second alternative would be likely to ensure that there were no adverse effects on locally designated nature conservation sites or carbon rich and rare soil but would severely restrict the potential to generate energy from renewable sources as there have not historically been any wind energy development applications of above 50MW in the Falkirk Council area.

Criteria for the assessment of wind energy developments within community separation areas.

5.4.39 The preferred alternative: The preferred alternative is to require wind energy development applications within the community separation areas to specifically address the potential for visual impact from the settlement edge, and within the settlement.

5.4.40 Environmental assessment of the preferred alternative: It is not possible to assess the effect of this alternative on the potential to generate energy from renewable sources or the effect on the landscape setting of settlements as no specific criteria have been defined against which to assess applications for wind energy development.

5.4.41 Enhancement/Mitigation: More specific criteria should be introduced to outline what level of visual impacts will be tolerated within community separation areas. The Spatial Framework in SPP indicates that within the defined community separation area, windfarms may be appropriate in some circumstances. Definition of the circumstances where windfarms within the defined community separation areas will be appropriate would assist the assessment of environmental effects and give more comfort that significant negative effects on the landscape setting of settlements can be avoided.

5.4.42 Alternatives Considered: The first alternative considered is to not approve wind energy development applications within the community separation area unless they can demonstrate that visual impacts from viewpoints along the affected settlement edge are not significantly adverse.

5.4.43 69.2% of the wind energy development applications above 50m in height which have been considered through the planning process were within the community separation distances set out in the preferred alternative.

5.4.44 Given that the Spatial Framework of SPP indicates that community separation areas are areas of significant protection it is not considered reasonable to assess a more permissive alternative than the preferred alternative.

5.4.45 The second alternative considered is not to approve wind energy development applications within the community separation area unless they can demonstrate that visual impacts from viewpoints along the affected settlement edge are not significantly adverse or moderately adverse.

5.4.46 The third alternative considered is not to approve wind energy development applications within the community separation area.

5.4.47 Environmental Assessment of alternatives: It is likely that the criteria set out in the first alternative will have a significant influence on wind energy development applications over 50m in height. This alternative will therefore have a significant negative effect through restricting the potential for energy generation from renewable sources.

5.4.48 In comparison to the first alternative the second alternative would have an even more significant negative effect through restricting the potential for energy generation from renewable sources.

5.4.48 Again the third alternative would have an even more significant negative effect through restricting the potential for energy generation from renewable sources.

Criteria for assessment of wind energy developments on local landscape character

5.4.49 For each distinctive landscape character area across the Council area a capacity to accommodate wind energy development has been identified and landscape objectives have been set. The environmental effect of setting different landscape objectives for different landscape character areas will have different effects on the distinctive character of the landscape and the potential to generate energy from renewable sources.

5.4.50 The preferred alternative: The preferred alternative is to pursue an landscape objective of: protection in landscape character areas with low potential to accommodate wind energy developments; protection and accommodation in landscape character areas with moderate-low and moderate potential to accommodate wind energy developments; and protection, accommodation/ change in landscape character areas with moderate-high potential to accommodate wind energy developments.

5.4.51 Environmental assessment of the preferred alternative: As all landscape character areas will be subject to some degree of protection, this will have a significant negative effects through restricting the potential to generate energy from renewable sources.

5.4.52 Enhancement/Mitigation: None proposed, mitigating the restriction on the potential to generate energy from renewable sources can only be achieved through accepting significant negative effects on the distinctive character of the landscape.

5.4.53 Alternatives Considered: The first alternative considered was to pursue a landscape objective of: protection and accommodation in landscape character areas with low and moderate-low potential to accommodate wind energy developments; and a landscape objective of accommodation/ change in landscape character areas with moderate and moderate-high potential to accommodate wind energy developments.

5.4.54 The second alternative considered was to pursue a landscape objective of: protection in landscape character areas with low and moderate-low potential to accommodate wind energy developments; and a landscape objective of protection and accommodation in landscape character areas with moderate and moderate-high potential to accommodate wind energy developments.

5.4.55 Environmental assessment of alternatives: Wind energy development applications within landscape character areas with low and moderate-low potential to accommodate wind energy developments account for 39.5% of the total number of wind energy development applications which have been considered through the planning system. Subjecting nearly 40% of wind energy development applications to some enhanced form of protection would still have significant negative effects through restricting the potential to generate energy from renewable sources. The first alternative would also have significant negative effects through adversely impacting on the distinctive character of the landscape.

5.4.56 The second alternative would have the most significant negative effects through restricting the potential to generate energy from renewable sources but significant negative effects on the distinctive character of the landscape would be avoided.

Cumulative effect of implementation of the SG

5.4.57 Cumulatively the preferred alternatives within the SG will act to provide a level of protection to our existing environmental assets which ensure that no significant negative effects are caused to the vast majority of our environmental assets by wind energy development. The only exception to this is the landscape setting of settlements which may be significantly affected by wind energy developments within the community separation zones.

5.4.58 The SG will however act cumulatively to have a significant negative effect on the potential to generate energy from renewable sources across the Council area. The main reasons for this are because: the proposed community separation areas cover such a significant proportion of the Council area which has historically seen the majority of wind energy development applications; and the relatively conservative approach adopted to assessing the impact of wind energy developments on local landscape character.

5.4.59 The potential for significant negative effects on the landscape setting of settlements could be mitigated by defining the circumstances where windfarms within the defined community separation areas will be appropriate and calibrating this to a level where significant negative effects will be avoided.

5.4.60 The only way to mitigate the significant negative effect the SG will have on the potential to generate energy from renewable sources would be to adopt a much more permissive approach to the assessment of impacts on local landscape character by pursuing a landscape objective of protection in only those landscape character areas with low capacity to accommodate wind energy development. Doing this would cause significant negative effects on the distinctive character of the landscape.

6. PROPOSALS FOR MONITORING

6.1 Legislative Requirement

6.1.1 Monitoring of the environmental performance of the Plan during its life is a key requirement of SEA. The SEA Act schedule 3 para 9 requires 'a description of the measures envisaged concerning monitoring in accordance with section 19'. The monitoring measures proposed are based on the different environmental issues identified as potentially being subject to significant environmental effects from the Local Development Plan.

6.2 Monitoring Proposals

6.2.1 Appendix 3 sets out the details of the proposed monitoring, the rationale for the selection and the methods and measures of monitoring. Monitoring will be conducted by the Council, in their capacity as the Responsible Authority for this SEA.

7.0 NEXT STEPS

7.1 Consultation

7.1.1 The consultative draft SG along with this Environmental Report has been made available to the public as well as the Consultation Authorities (SEPA, Scottish Natural Heritage and Historic Scotland) , for comment, in accordance with the Environmental Assessment (Scotland) Act, 2005. The documents have also been made available to a targeted list of other stakeholders.

7.1.2 The consultation will run for a period of 7 weeks until 16th of January 2015. Comments and responses to this Environmental Report will be considered following these consultation periods, so that any revisions can be made before the SG is finalised.

7.2 Adoption of SG

7.2.1 Following analysis of the consultation responses the SG will be modified by officers before being finalised and presented back to the Council for approval for submission to Scottish Ministers.

7.3 SEA Post-Adoption Statement

7.3.1 Shortly after adoption, the SEA Post-adoption Statement will be produced. The Statement sets out how environmental considerations have been integrated into the Framework, how the findings of the Environmental Report have been taken into account, and how the consultation responses have been addressed.

7.3.2 The SEA Post-adoption Statement will confirm the framework for monitoring of the plan implementation and the responsibilities for monitoring.

**SG14 – Spatial Framework and Guidance for Wind Energy Development
Strategic Environmental Assessment
Environmental Report**

Appendix 1 – Environmental Baseline Report

1. Introduction

1.1 This Environmental Baseline Report is to be read in tandem with the Environmental Report.

1.2 Given the broad and comprehensive scope of the Environmental Report, it has been decided to deal with the environmental baseline for each environmental topic area within a specific chapter of a separate Environmental Baseline Report. Each chapter of this report will be structured with the following sub-sections:

1. Existing Environmental Issues
2. Existing Environmental Characteristics
3. Likely Future Changes without the Implementation of the Plan
4. Current Environmental Protection Objectives
5. How Objectives Have Been Taken into Account

2. Biodiversity, Flora and Fauna

2.1 Existing Environmental Issues

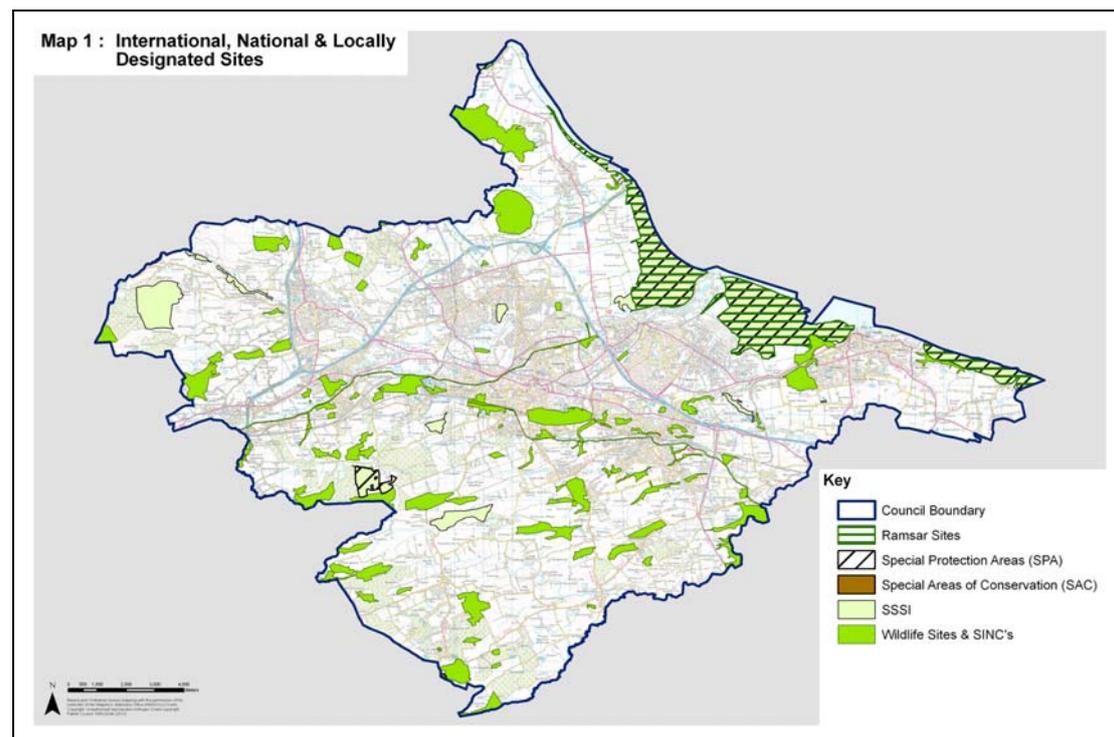
2.1.1 Loss of or damage to sites/areas of high ecological importance. Non-statutory sites are particularly vulnerable and can be lost or damaged by operations that are out with planning control.

2.1.2 Pressures from development resulting in habitat disturbance, degradation or loss and/or species disturbance or loss.

2.2 Existing Environmental Characteristics

Designated Sites

2.2.1 Falkirk Council area has a number of local, national and internationally designated sites for nature conservation which are shown on map 1 below:



Map 1: Sites designated for nature conservation value

2.2.2 International designations:

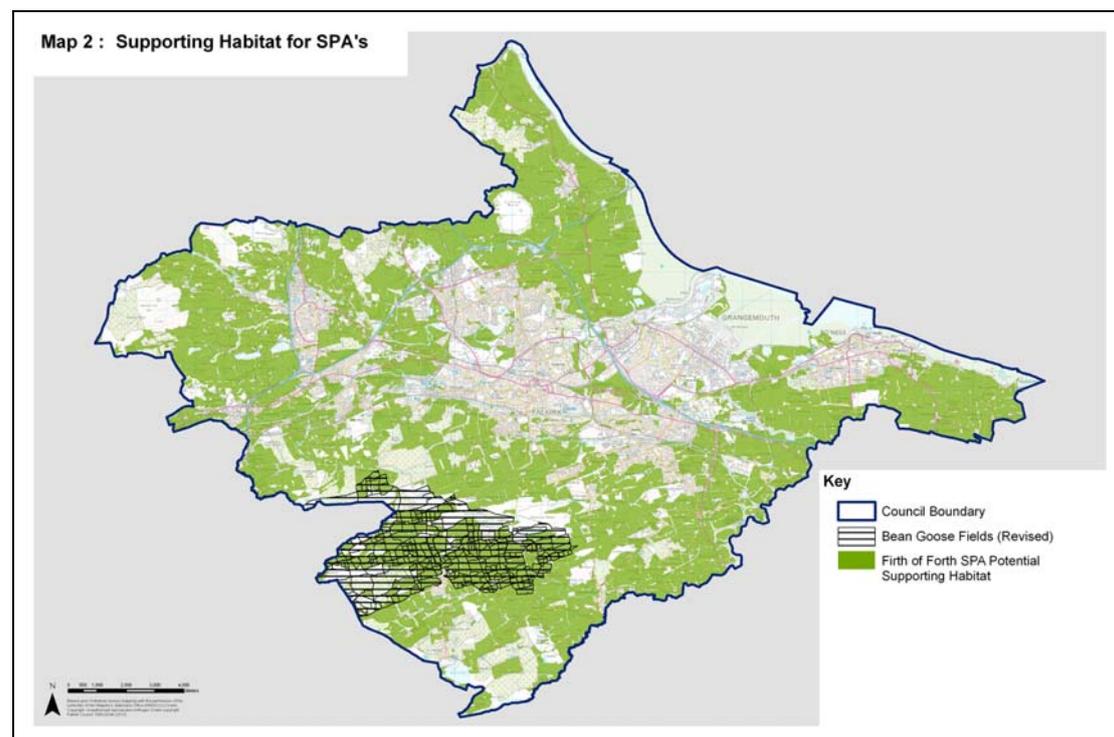
- 1 Ramsar site Firth of Forth
- 1 Special Area for Conservation (SAC) Black Loch Moss
- 2 Special Protection Areas (SPA): Firth of Forth, Slamannan Plateau

2.2.3 The Firth of Forth SPA covers an area of 6,313 hectares of which approximately 1,440 hectares (22.8%) is within the Falkirk Council area. It supports internationally important populations of sandwich tern, bar-tailed

godwit, golden plover, red-throated diver, slavonian grebe, knot, pink footed goose, redshank, shelduck, turnstone, waterfowl assemblage. The qualifying species do not only use the designated area but also use supporting habitat up to 20km inland from the SPA. Falkirk Council have little information regarding which areas are used as supporting habitat but understand that they are likely to include arable land, improved grassland, semi improved grassland and marshy grassland. These areas are shown on map 2 below.

2.2.4 SNH commissioned a study to better identify those areas which act as supporting habitat to the Firth of Forth SPA for golden plover, grey plover, lapwing, curlew, oystercatcher, pink footed geese and redshank, collating data collected held by the British Trust for Ornithology. The following findings were of relevance to the Falkirk Council area:

- Large numbers of Pink Footed Geese use fields in northern Falkirk;
- Curlew are found along most of the southern forth coast using more inland feeding sites than any other wader species;
- Redshank and Oystercathcer show widespread coastal distribution with fewer numbers venturing inland;
- Falkirk has a concentration of Lapwing using coastal areas but with far less inland use.



Map 2: Areas of potential supporting habitat for the Firth of Forth and Slamannan Plateau SPA

2.2.5 The Slamannan Plateau SPA covers an area of 582.27 hectares 105.50 hectares (18.1%) of which is in the Falkirk Council area and supports a internationally important population of the Taiga bean goose (*Anser fabalis fabalis*) accounting for 100% of the Scottish population and 52% of the UK

population. Bean geese use an area far larger than the designated SPA. Their use of the wider Slamannan Plateau has been extensively documented by the Bean Goose Action Group whose most recent report is for the winter of 2008/2009. Scottish Natural Heritage published a report entitled "The design of a monitoring programme for Bean Geese on the Slamannan Plateau" in 2010 which explored options for setting up a formalised Bean Goose monitoring regime. Formal monitoring by SNH has now commenced based on the recommendations of the report. A supplementary informal monitoring programme has also been set up to monitor the supporting habitat.

2.2.6 The Black Loch Moss SAC is an internationally important habitat of active raised bogs and degraded raised bogs covering 108.42 ha of which 2.5 hectares (2.3%) is in Falkirk Council area.

2.2.7 National designations:

- 10 Sites of Special Scientific Interest: Avon Gorge; Bowmains Meadow; Black Loch Moss; Carron Dams; Carron Glen; Darnrig Moss; Denny Muir; Firth of Forth; Howierig Muir; and Slamannan Plateau.

2.2.8 Local designations:

- 62 Wildlife Sites
- 24 Sites of Importance for Nature Conservation
- 1 Local Nature Reserve

2.2.9 A relatively small number of the local sites are currently under active management.

Ancient, Long Established and Semi Natural Woodland

2.2.10 There are limited, but significant, areas of ancient or long-established woodland follows:

27 Ancient Woodlands

5 Long established woodlands (semi-natural origin)

26 Long established woodlands (plantation origin)

2.2.11 In total these woodlands cover 1501.72ha or 4.8% of the Council area.

2.2 Likely Future Changes without the Implementation of the Plan

2.3.1 Without the SG, applications for wind energy development will continue to be assessed against LDP policies RW01 "Renewable Energy"; GN03 "Biodiversity and Development" and GN04 "Trees Woodland and Hedgerows" as well as the spatial framework set out in the SPP.

2.3.2 The spatial framework of the SPP indicates that Natura 2000 sites, Ramsar sites and Sites of Special Scientific Interest are designated as areas of significant protection where wind farms may be appropriate in some circumstances. The spatial framework also indicates that all other ecological designations (Local Nature Reserves, Wildlife Sites and Sites of Importance

for Nature Conservation) are to be considered as areas with potential for wind farm development where wind farms are likely to be acceptable subject to detailed consideration against identified policy criteria.

2.3.3 Policy RW01 identifies ecological impacts as one of the factors which wind energy developments will be assessed against. Policies GN03 and GN04 set out the detailed criteria against which development affecting designated nature conservation sites and trees woodland and hedgerows will be assessed.

2.3.4 There is tension between the spatial framework set out in SPP and the policies in the LDP particularly with regard to their differing approaches to considering effects on locally designated ecological sites and ancient, long established and semi natural woodland.

2.3.5 The SPP spatial framework indicates that wind energy developments affecting locally designated nature conservation sites are likely to be acceptable subject to detailed consideration against identified policy criteria whereas policy GN03 of the LDP indicates that they will not be permitted unless it can be demonstrated that the overall integrity of the site, habitat or species will not be compromised or that any effects are clearly outweighed by social or economic benefits of substantial local importance.

2.3.6 The SPP spatial indicates that wind energy developments affecting ancient, long established or semi natural woodland are likely to be acceptable subject to detailed consideration against identified policy criteria whereas policy GN04 of the LDP indicates that they will be protected as a habitat of irreplaceable value.

2.3.7 As the SG will establish the scale of wind energy development which the spatial framework will apply to, there will be confusion as to which policy approach to apply to wind energy developments affecting locally designated nature conservation sites and ancient, long established and semi natural woodlands in its absence.

2.3 Current Environmental Protection Objectives

2.4.1 The following plans programmes and strategies have been reviewed to gain a full understanding of the environmental objectives for this topic area:

- Council Directive 79/409/EEC on the conservation of wild birds
- Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora
- Wildlife and Countryside Act 1981
- Conservation (Natural habitats &c.) Amendment (Scotland) Regulations 2007
- Nature Conservation (Scotland) Act 2007
- UK Biodiversity Action Plan
- Scotland's Biodiversity – It's In Your Hands.
- Falkirk Area Biodiversity Action Plan

2.4.2 Biodiversity policies from international to local levels aim in particular to conserve habitats, species and ecosystems. Halting the decline of key species is important, and where possible remedial action and enhancement should be implemented in degraded areas. Policies also note the importance of an ecosystem approach – a holistic, landscape approach to biodiversity conservation that goes beyond the traditional emphasis on protecting individual sites.

2.5 How Objectives Have Been Taken into Account

2.5.1 In order to undertake a process of environmental assessment the current environmental protection objectives have been translated into a set of SEA objectives and assessment questions with which to assess each component of the SG. SEA objectives for the biodiversity, flora and fauna topic are shown in the table below:

SEA Objectives	Assessment Questions
<ul style="list-style-type: none"> • Demonstrate no adverse effect on the integrity of Natura 2000 sites.. • Protect and enhance Sites of Special Scientific Interest and Wildlife Sites • Protect and enhance other locally designated sites of biodiversity value • Protect ancient, long established and semi natural woodlands as a habitat resource of irreplaceable value 	<ul style="list-style-type: none"> • Can it be demonstrated that the option will have no adverse effect on the integrity of Natura 2000 sites? • Does the option protect and enhance SSSI and/or Wildlife Sites? • Does the option protect and enhance locally designated sites of biodiversity value? • Does the option protect ancient, long established and semi natural woodland?

Table 1: Biodiversity, Flora and Fauna – SEA Objectives and Assessment Questions.

2.5.2 The results of assessment are shown in section 5 and appendix 2 of the Environmental Report.

3. Population and Human Health

3.1 Exiting Environmental Issues

3.1.1 Wind energy developments are known to have some negative effects on human health due to increased noise, risk of injury from ice throw and shadow flicker.

3.1.2 Disturbance of areas of deep peat by wind energy developments may also result in the generation of waste peat and waste controls may apply. SEPA consider disposal of significant depth of peat as being landfilled waste, and this may not be consentable under their regulatory regimes. Disposal, of deep peat, can lead to a number of issues due to its very low tensile strength and high water content e.g: it is likely to have a very low bearing capacity, making it a hazard to people or animals walking on it; slides or movement are highly likely and can be caused by heavy rainfall; and there is potential for contaminated run-off.

3.2 Existing Environmental Characteristics

Human Health

3.2.1 Falkirk's first multi-turbine wind energy development went on online in the autumn of 2011. There are currently 12 operational wind turbines within the Council area ranging in height from 12m to blade tip to 77m to blade tip. As yet there are no known complaints of noise nuisance, risk of injury from ice throw or adverse effect on health due to shadow flicker.

Waste Peat

3.2.2 The peat resource is explored further in the soils section. We have no data relating to the volumes of waste peat arising within the Falkirk Council area or nationally.

3.3 Likely Future Changes without the Implementation of the Plan

Human Health

3.3.1 Without the SG, applications for wind energy development will continue to be assessed against policies within the LDP and SPP. Policy RW01 of the LDP sets out the factors which wind energy developments will be assessed against which include impacts on communities including noise, shadow flicker and air quality. So in the absence of the SG these factors will still be considered but detailed guidance on how the policy will be assessed will not be available.

3.3.2 The Scottish Government's target of 100% of demand for electricity to be met from renewable sources by 2020 is likely to act as a material consideration in favour of wind energy development. In the absence of a coherent spatial framework for wind energy development this will increase the

pressure for development in areas which could impact on settlements and residential properties and could lead to significant negative environmental effects.

Waste peat

3.3.3 Without the SG, applications for wind energy development which affect peatland will be assessed against policies RW04 “Agricultural Land, Carbon Rich Soils and Rare Soils” and RW01 “Renewable energy of the LDP and the spatial framework in SPP. Policy RW01 indicates that impacts on carbon rich and rare soils is one of the factors which wind energy developments will be assessed against.

3.3.4 The spatial framework in SPP indicates that carbon rich soils, deep peat and priority peatland habitat are designated as areas of significant protection where wind farms may be appropriate in some circumstances whereas policy RW04 indicates that development involving the significant permanent loss of carbon rich soils will not be permitted unless the development of the site is necessary to meet an overriding local or national need where no other suitable site is available. In the absence of the SG therefore, there will be confusion as to what scale of wind energy development represents an overriding local or national need.

3.4 Current Environmental Protection Objectives

3.4.1 The following plans programmes and strategies have been reviewed to gain a full understanding of the environmental objectives for this topic area:

- Scottish Planning Policy
- Scotland’s Zero Waste Plan 2010

3.4.2 Scottish Planning Policy indicates that planning applications for energy infrastructure projects (including onshore wind turbines) should include consideration of impacts on communities and individual dwellings, including visual impact, residential amenity, noise and shadow flicker;

3.4.3 The Zero Waste Plan for Scotland aims to achieve a zero waste Scotland, where we make the most efficient use of resources by maximising the reuse, recycling and recovery of resources instead of treating them as waste.

3.4.4 The Zero Waste Plan for Scotland and SPP emphasise the importance of the planning system in delivering waste infrastructure.

3.5 How Objectives Have Been Taken into Account

3.5.1 In order to undertake a process of environmental assessment the current environmental protection objectives have been translated into a set of SEA objectives and assessment questions with which to assess each component of the SG. SEA objectives for the population and human health

topic are shown in the table below:

SEA Objectives	Assessment Questions
<ul style="list-style-type: none">• Prevent risk to human health through increased impacts from ice throw and shadow flicker.• Avoid increasing noise nuisance• Avoid the increased production of waste peat	<ul style="list-style-type: none">• Does the increase the risk to human health from ice throw and shadow flicker?• Does the option increase noise nuisance?• Does the option increase the production of waste peat?

Table 2: Population and Human Health – SEA Objectives and Assessment Questions

3.5.2 The results of assessment are shown in section 5 and appendix 2 of the Environmental Report.

4. Soil

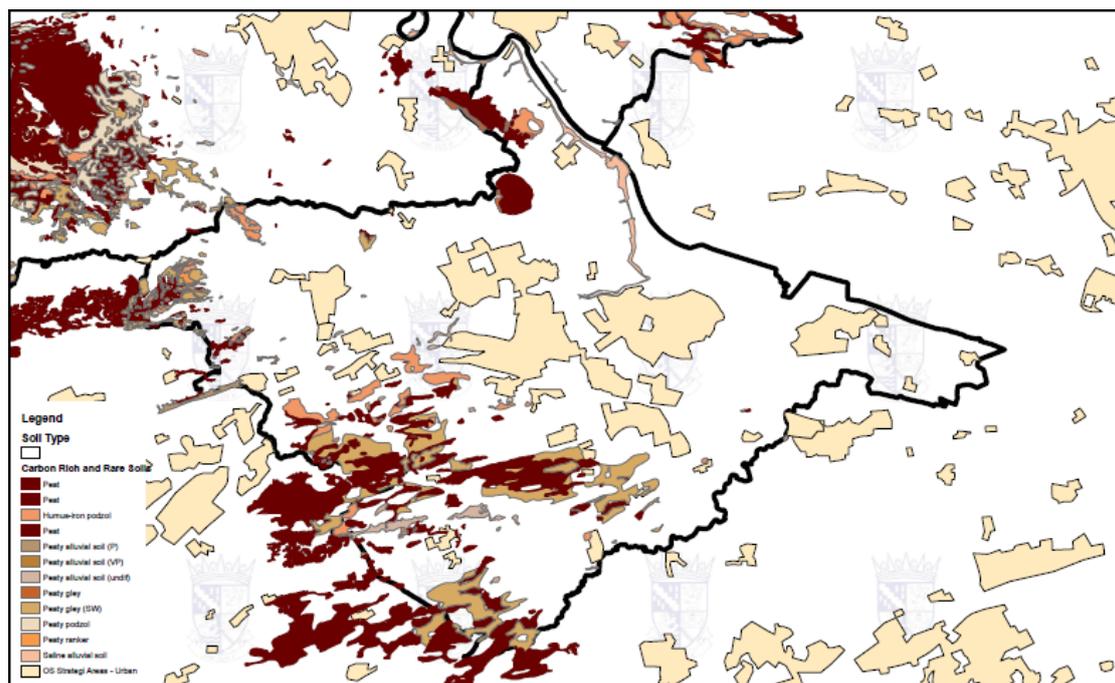
4.1 Existing Environmental Issues

4.1.1 Wind turbine developments have the potential to result in the disturbance of carbon rich soils, particularly peat and the loss of their integrity and stability, resulting in erosion and degradation. This is likely to lead to the release of stored carbon, contributing to greenhouse gas emissions, to effects on hydrology and to pollution/siltation of watercourses with potential significant adverse effects on their ecological status.

4.2 Existing Environmental Characteristics

Carbon Rich and Rare Soil

4.2.1 There are a range of soil types of potential national interest within the Falkirk area shown on map 4 below: For example, there are soil types found which are defined as carbon rich soils including basin peat, blanket bog, peat alluvium complex, peaty podzols, peaty gleys, podzols and humus iron podzols. In addition there are rare soils such as saltings along part of the shoreline.



Map 3: Carbon Rich and Rare Soils

4.2.2 Carbon rich soils occur mainly in the upper braes and Slamannan Plateau. Areas in the vicinity of Banknock, Slamannan, Limerigg and Standburn all contain some carbon rich soils.

4.2.3 Saltings occur along the bank of the Forth Estuary and the tidal extent of the River Carron from the North of Grangemouth to South Alloa.

4.3 Likely Future Changes without the Implementation of the Plan

4.3.1 Without the SG, applications for wind energy development which affect carbon rich and rare soil will be assessed against policies RW04 “Agricultural Land, Carbon Rich Soils and Rare Soils” and RW01 “Renewable energy of the LDP and the spatial framework in SPP. Policy RW01 indicates that impacts on carbon rich and rare soils is one of the factors which wind energy developments will be assessed against.

4.3.2 The spatial framework in SPP indicates that carbon rich soils, deep peat and priority peatland habitat are designated as areas of significant protection where wind farms may be appropriate in some circumstances whereas policy RW04 indicates that development involving the significant permanent loss of carbon rich soils will not be permitted unless the development of the site is necessary to meet an overriding local or national need where no other suitable site is available. In the absence of the SG therefore, there will be confusion as to what scale of wind energy development represents an overriding local or national need.

4.3.3 The spatial framework in SPP designates rare soils as areas with potential for wind farm development where wind farms are likely to be acceptable whereas policy RW04 indicates that development involving the significant permanent loss of carbon rich soils will not be permitted unless the development of the site is necessary to meet an overriding local or national need and no other suitable sites are available.

4.3.4 As the SG will establish the scale of wind energy development which the spatial framework will apply to, there will be confusion as to which policy approach to apply to wind energy developments affecting rare soils in its absence.

4.4 Current Environmental Protection Objectives

4.4.1 The following plans programmes and strategies have been reviewed to gain a full understanding of the environmental objectives for this topic area:

- Scottish Planning Policy
- Scottish Soil Framework (2009)

4.4.2 Scottish Planning Policy indicates that the disturbance of some soils, particularly peat, may lead to the release of stored carbon, contributing to greenhouse gas emissions. Where peat and other carbon rich soils are present, applicants should assess the likely effects associated with any development work.

4.4.3 Policies on soil seek to protect resources from a range of impacts, including soil sealing by development, increased susceptibility to erosion and soil pollution.

4.5 How Objectives Have Been Taken into Account

4.5.1 In order to undertake a process of environmental assessment the current environmental protection objectives have been translated into a set of SEA objectives and assessment questions with which to assess each component of the SG. SEA objectives for the soil topic are shown in the table below:

SEA Objectives	Assessment Questions
<ul style="list-style-type: none"> • Protect carbon rich soils and other rare soils 	<ul style="list-style-type: none"> • Does the option protect carbon rich soils and other rare soils (basin peat, blanket bog, peat alluvium complex, peaty podzols, peaty gleys, podzols, humus iron podzols and saltings)? • Does the option safeguard against the release of green house gasses and carbon from soils?

Table 3: Soil – SEA objectives and Assessment Questions

4.5.2 The results of assessment are shown in section 5 and appendix 2 of the Environmental Report.

5. Material Assets

5.1 Existing Environmental Problems

5.1.1 There are some key constraints on the development of wind energy, including the built up nature of the area, conflict with bird habitats and aviation interests. A spatial framework for the development of wind energy projects currently exists as Supplementary Planning Guidance but this does not reflect the updated framework as set out in Scottish Planning Policy.

5.1.2 There are 17 operational wind turbines in the Falkirk Council area generating 34.48GWh of energy, this represents 4.6% of the Falkirk Council area's total energy consumption in 2012 and suggests that the area is not fulfilling its potential towards meeting the Scottish Government's target of sourcing 100% of demand for electricity to be met from renewable sources by 2020.

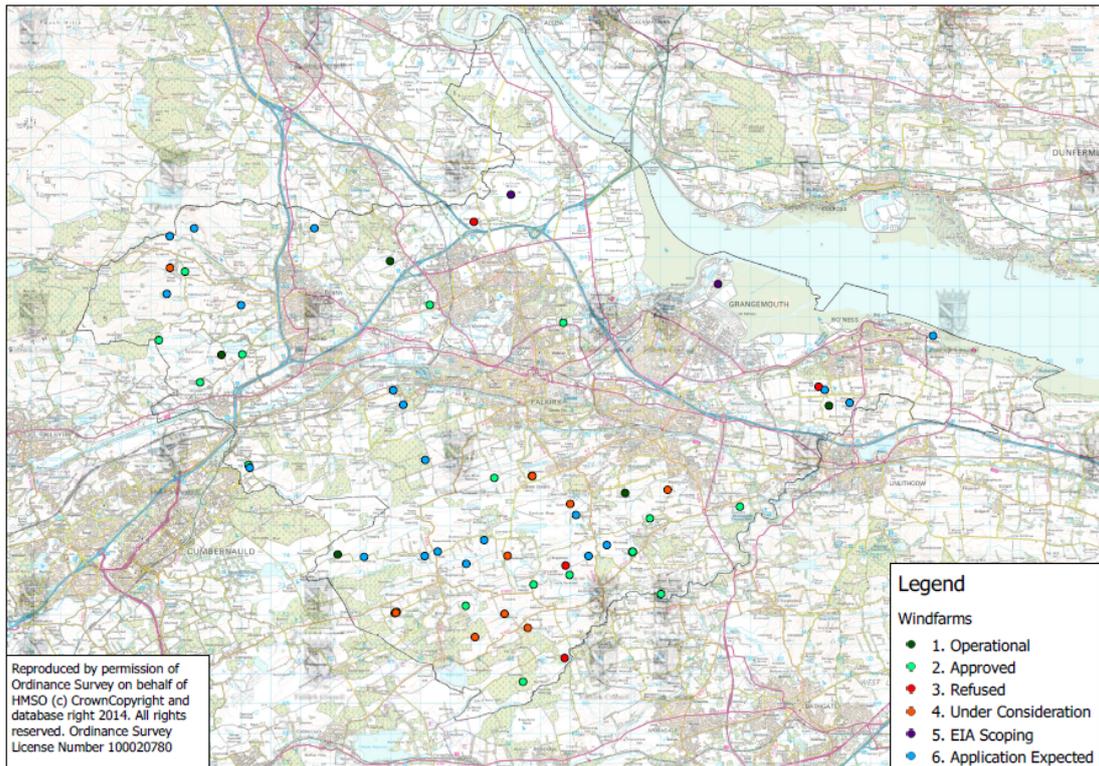
5.2 Existing Environmental Characteristics

Wind Energy Generation

5.2.1 A renewable energy study was commissioned in 2003 for the Falkirk Council Local Plan which aimed to identify potential for four types of renewable energy technology. Results clarified constraints and identified some limited potential. It suggested that wind had potential for small scale commercial and community projects.

5.2.2 The availability of larger turbines combined with an increase in their efficiency has meant that areas which were previously precluded from wind energy development are now seen as more attractive by the industry. One of the main issues in Falkirk is the increase in interest for single turbines, in a range of tip heights as high as 130m to tip. The main driver for this is the introduction of the Feed in Tariff in April 2010. A set rate is paid for each unit (KWh) of energy generated and offers significant savings on energy bills and also direct financial return. This is particularly attractive in the agricultural sector.

5.2.3 At the time of writing (November 2014) there are currently 17 wind turbines operational within the Falkirk Council area with an estimated combined power rating of 13.12MW and an estimated annual energy output of 34.48GWh. 33 further turbines have been approved with a combined power rating of 31.34MW and an estimated annual energy output of 82.35GWh. There are planning applications pending consideration for a further 14 turbines. 10 turbines are at the EIA scoping stage and planning applications are either expected or have been recently refused or withdrawn for an additional 46 turbines. Map 7 below summarises the situation:



Map 4: Wind Energy Developments in the Falkirk Council Area.

5.2.4 In 2012 the Falkirk Council area consumed 749GWh of energy. The combined energy output of all operational and consented wind energy developments is 116.83GWh (15.6% of the energy consumed in the Council area in 2012).

5.2.5 Energy consumption in Falkirk has decreased by an average of 1% per year between 2005 and 2012. If it is assumed this decrease in demand continues at the same rate in the future then by 2020 projected energy consumption in Falkirk would be 691GWh. Installed renewable energy currently generates 34.48GWh. In order to meet the Scottish Government's target of producing 100% of Scotland's demand for electricity from renewable sources by 2020 locally i.e. 100% of Falkirk's annual demand for electricity from renewable sources by 2020, renewable energy generation equipment with the capacity to generate an additional 656.52GWh of energy would need to be installed. If 100% of this requirement was to be sourced from wind energy generation then this would equate to an additional 246.19MW of installed capacity (an additional 82 x 125m to blade tip turbines).

5.3 Likely Future Changes without the Implementation of the Plan

5.3.1 It is arguable whether the SG would act to increase the potential for wind energy development across the Council area or reduce it.

5.3.2 On the one hand providing an easily interpretable steer to guide wind energy development towards the areas where significant negative effects on the environment are unlikely could encourage investment as the uncertainty over the outcome of the planning process would be reduced. In the absence

of the SG therefore the potential scale of wind energy development would be reduced.

5.3.3 On the other hand, if it is accepted that the Scottish Government's target of 100% of demand for electricity to be met from renewable sources by 2020 is likely to act as a material consideration in favour of wind energy development, then the SG may act to reduce pressure on the most sensitive environments thereby reducing the potential scale of wind energy development which may have been acceptable in the absence of the SG.

5.4 Current Environmental Protection Objectives

5.4.1 The following plans programmes and strategies have been reviewed to gain a full understanding of the environmental objectives for this topic area:

- Scottish Planning Policy
- The Government Economic Strategy
- Electricity Generation Policy Statement
- 2020 Routemap for Renewable Energy in Scotland – Update 2013

5.4.2 In May 2011, the Scottish Government set a target for renewable sources to generate the equivalent of 100 per cent of Scotland's gross annual electricity consumption by 2020, with an interim target of 50 per cent by 2015. In 2012 a figure of 40.3% was achieved.

5.5 How Objectives Have Been Taken into Account

5.5.1 In order to undertake a process of environmental assessment the current environmental protection objectives have been translated into a set of SEA objectives and assessment questions with which to assess each component of the SG. SEA objectives for the material assets topic are shown in the table below:

SEA Objectives	Assessment Questions
<ul style="list-style-type: none"> • Maximise the contribution that the Falkirk Council area makes towards meeting the Scottish Government's target of sourcing 100% of electricity demand from renewable energy generation by 2020. 	<ul style="list-style-type: none"> • Does the option improve the ability of the Falkirk Council area to assist in meeting the Scottish Government's target of sourcing 100% of electricity demand from renewable energy generation by 2020?

Table 4: Material Assets – SEA Objectives and Assessment Questions

5.5.2 The results of assessment are shown in section 5 and appendix 2 of the Environmental Report.

6. Cultural Heritage

6.1 Existing Environmental Issues

6.1.1 A consistent approach to the assessment of new development proposals affecting the Frontiers of the Roman Empire (Antonine Wall) World Heritage Site (WHS) and its buffer zone has only recently been set out in supplementary guidance, there may be a need to reinterpret how this guidance to ensure that new wind energy developments do not have an adverse affect on the setting of the WHS.

6.1.2 The area's Scheduled Ancient Monuments have generally been effectively safeguarded in recent times, but more attention may need to be accorded to the setting of sites, particularly those related to the Frontiers of the Roman Empire (Antonine Wall) World Heritage Site.

6.1.3 There are some important battlefields which currently have no specific protection (at Bonnymuir) there may be a need to set out how adverse impact on these important battlegrounds from wind energy development can be best avoided.

6.2 Existing Environmental Characteristics

World Heritage Sites

6.2.1 The largest and most important concentration of archaeological interest is associated with the Antonine Wall which traverses the area. These include sections of the wall itself, forts and camps. The Frontiers of the Roman Empire (Antonine Wall) World Heritage site was designated in 2008.

Scheduled ancient monuments

6.2.2 The area has a wealth of archaeological sites and features including over 100 Scheduled Ancient Monuments.

6.2.3 The Forth and Clyde, and Union canals are perhaps the most important reminders of the area's industrial history. These were restored to navigation under the Millennium Link project

6.2.4 There are a range of other ancient monuments including various domestic and defensive prehistoric sites, some ecclesiastical sites, castles and houses, and the canals.

Listed buildings

6.2.5 There are 375 Listed Buildings in the Falkirk Area. Most of the Listed Buildings are concentrated in the Town Centres of Falkirk and Bo'ness, as well as a notable amount in Airth and the hamlets of Dunmore and Muirhouses. There are 40 Category A Listed Buildings including such landmark buildings as the Pineapple, Dunmore, Blackness Castle, Callendar

House and the Steeple. 216 Category B listed buildings and 119 Category C listed buildings.

6.2.6 There are 30 buildings on the Scottish buildings at risk register including the former RSNH buildings at Larbert, Lathallan House, Dunmore Park House and Rosebank Distillery

Gardens and designed landscapes

6.2.7 Three sites identified within the Inventory of Gardens and Designed Landscapes lie in the Falkirk areas: Dunmore Park, which dates from the 1820s, The Pineapple ornamental gardens and Callendar Park.

6.2.8 A list of 37 non - inventory designed landscapes and sites with remnant designed landscape features has been compiled as part of SG09 Landscape Character Assessment and Landscape Designations.

Conservation areas

6.2.9 There are currently 9 Conservation Areas:

- Dunmore
- Airth
- Letham
- Muirhouses
- Grange
- Falkirk Town Centre
- Bo'ness Town Centre
- Allandale
- Arnothill

6.2.10 All Conservation Areas have undergone an appraisal and a comprehensive suite of Conservation Area Management Plans has been prepared.

Other areas or concentrations of historically interesting buildings

6.2.11 There are various other areas of architectural, historic or townscape merit across the Council area which do not have conservation area status. These include the model village of Westquarter, and various Victorian/Edwardian districts in Falkirk, Grangemouth, Larbert and Polmont.

6.2.12 To recognise this the Falkirk Council Local Plan designated eight Areas of Townscape Value:

- Bo'ness Town Centre South
- Glasgow Road, Denny
- Larbert
- Grahamston
- Woodlands

- Westquarter
- Brightons
- Old Grangemouth

Historic Battlefields

6.2.13 In March 2011, the Inventory of historic battlefields was launched, containing records for the first 17 battlefields identified as nationally important. the 1746 Battle of Falkirk Muir (Falkirk II) will is represented in the inventory. Historic Scotland has opened consultation for a second group of Inventory records, comprising a further 11 battlefields identified as being of national importance the 1526 Battle of Linlithgow Bridge is part of this second tranche.

6.2.14 Although historically significant the site of the First Battle of Falkirk is unknown. The 1820 Battle of Bonnymuir is another battle of historical importance.

6.3 Likely Future Changes without the Implementation of the Plan

6.3.1 Without the SG, applications for wind energy development which affect cultural heritage features will continue to be assessed against policies RW01 “Renewable Energy”; D07 “Antonine Wall”; D08 “Sites of Archaeological Interest”; D09 “Listed Buildings”; D10 “Conservation Areas”; D11 Areas of Townscape Value”; D12 Historic Gardens and Designed Landscapes”; and D13 “Battlefield Sites” of the LDP. Policy RW01 already indicates that one of the factors which wind energy developments will be assessed against is impacts on the historic environment and policies D07-D13 set out the detailed policy criteria for each element of the historic environment.

6.3.2 SPP already defines the level of protection to be afforded to World Heritage Sites; Sites identified in the Inventory of Gardens and Designed Landscapes; and Sites identified in the Inventory of Historic Battlefields, identifying them as areas of significant protection where windfarms may be appropriate in some circumstances. In the absence of the SG there will be doubt as to what scale of wind energy development this spatial framework applies to. There may be some doubt as to whether the level of protection afforded by the SPP spatial framework is more or less than that provided by the detailed policy criteria in LDP policies.

6.3.3 The Scottish Government’s target of 100% of demand for electricity to be met from renewable sources by 2020 is likely to act as a material consideration in favour of wind energy development. In the absence of a coherent spatial framework for wind energy development this will increase the pressure on sites of cultural heritage value and could lead to significant negative environmental effects.

6.4 Current Environmental Protection Objectives

6.4.1 The following plans programmes and strategies have been reviewed to gain a full understanding of the environmental objectives for this topic area:

- Scottish Historic Environment Policy (SHEP) 2009
- Scottish Planning Policy (SPP)
- Managing Change in the Historic Environment Guidance Notes

6.4.2 Historic environment policies aim to identify and protect historic buildings and sites from inappropriate development and damage. Policies extend beyond specific designated sites to reflect the value of wider townscapes, the setting of monuments and historic buildings, and wider cultural landscapes.

6.5 How Objectives Have Been Taken into Account

6.5.1 In order to undertake a process of environmental assessment the current environmental protection objectives have been translated into a set of SEA objectives and assessment questions with which to assess each component of the SG. SEA objectives for the cultural heritage topic are shown in the table below:

SEA Objectives	Assessment Questions
<ul style="list-style-type: none"> • Protect the historic environment. 	<ul style="list-style-type: none"> • Will the Frontiers of the Roman Empire (Antonine Wall) World Heritage Site and/or its setting be adversely impacted? • Will any scheduled monument and/or its setting be adversely impacted? • Will any listed building and/or its setting be adversely impacted? • Will the setting of a conservation area be adversely impacted? • Will a Historic Garden or Designed Landscape and/or its setting be adversely impacted? • Will any Historic Battlefield and/or its setting be adversely impacted?

Table 5: Cultural Heritage – SEA Objectives and Assessment Questions

6.5.2 The results of assessment are shown in section 5 and appendix 2 of the Environmental Report

7. Landscape

7.1 Existing Environmental Issues

7.1.1 The countryside is under increasing pressure for wind energy development. The cumulative impact of growth in wind energy developments could become significant on the landscape quality.

7.1.2 Special Landscape Areas (SLA) are designated for their distinctive landscape character and local value. Future wind energy developments within SLA and near their boundaries can impact on landscape quality and value.

7.1.3 Although there are currently only 12 operational wind turbines within the Council area and the visual impact of these is very local, there has been an increase in the number of windfarms entering the planning system. This increase in activity could point towards a significant emerging environmental issue which will need to be closely monitored.

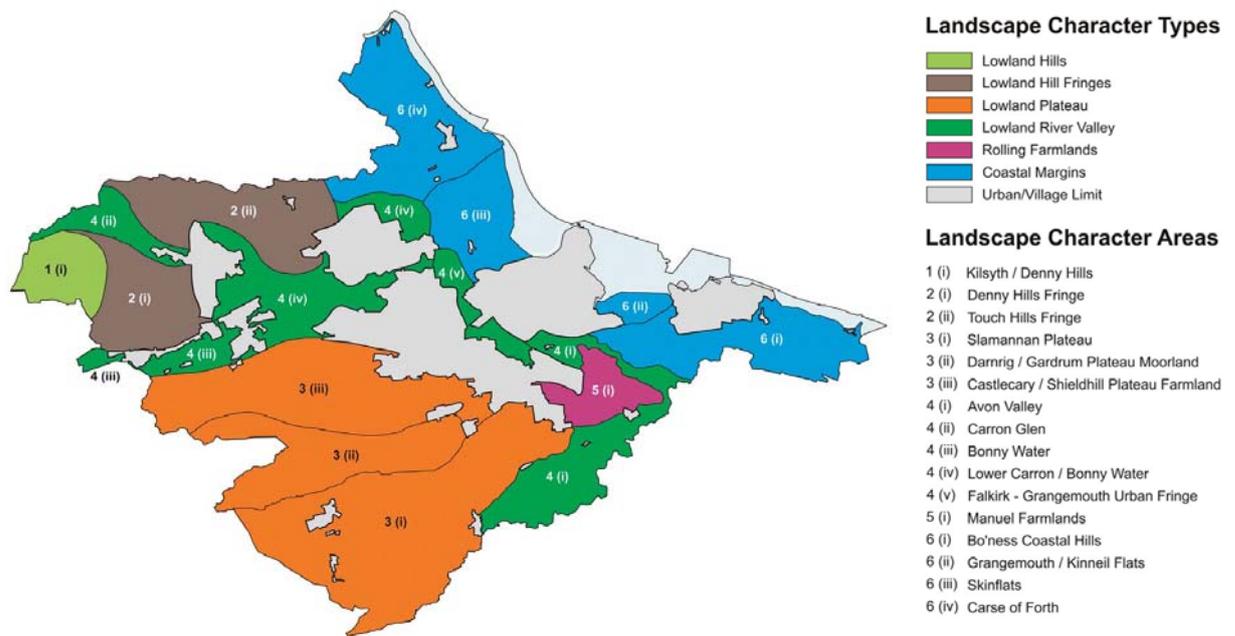
7.1.4 There are a number of windfarm developments in neighbouring Council areas are visible from the Falkirk Council area and could have a cumulative visual impact in association with any new wind energy developments within the Council area.

7.1.5 A study (which did not specifically take landscape issues into account) was completed which found that there was a limit to the likely scale of small and medium scale wind energy developments within the Falkirk area, however, as technology progresses and with the advent of feed in tariffs, pressure for wind farm developments are occurring and will likely continue to occur.

7.2 Existing Environmental Characteristics

Landscape Character

7.2.1 Despite its small geographical area, the area has 6 distinct landscape character types which have been influenced by its underlying geology and glacial history. A Landscape Capacity Study which was undertaken to inform the production of the previous wind energy SPG identified 16 distinct landscape character areas, these are shown on map 8 below:



Map 5: Landscape Character Types and Landscape Character Areas

Special Landscape Areas

7.2.2 Three Special Landscape Areas are currently designated by Falkirk Council, as shown in Map 9:

- South of Bo'ness.
- The Avon Valley/Slamannan Plateau: the plateau is characterised by its open nature. The River Avon valley contains an attractive rolling landscape of field units, hedgerows and tree belts.
- The Denny Hills: rugged landform distinctive natural and manmade features together with a pattern of vegetation interact to create a landscape of value and character.

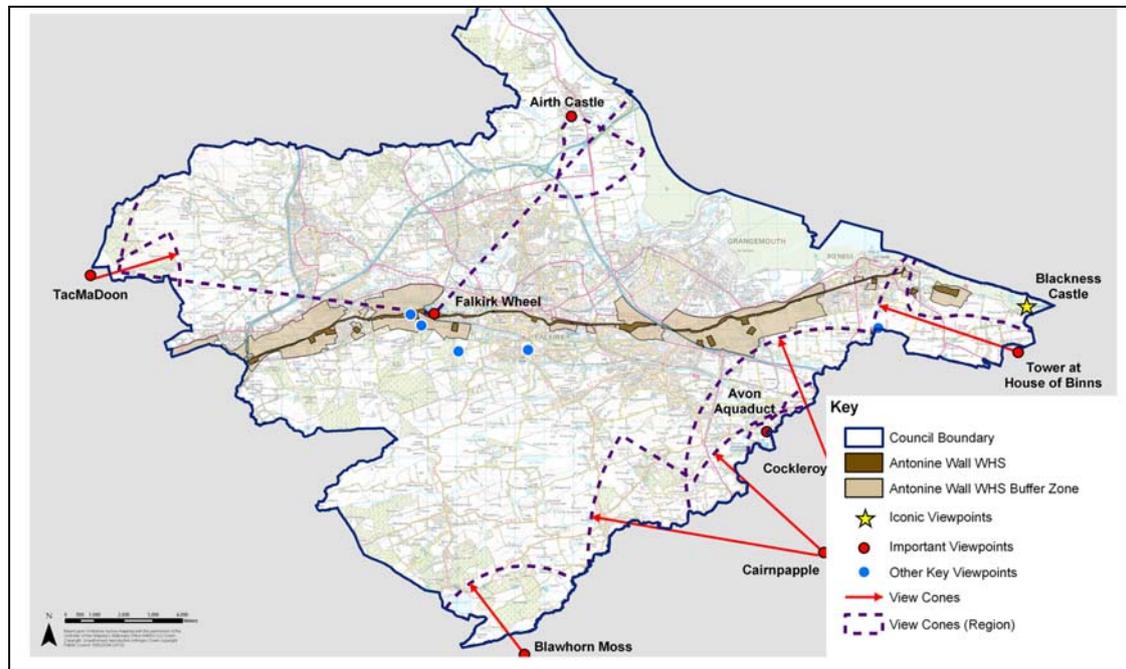


Map 6: Special Landscape Areas (from left to right: South Bo'ness, Avon Valley/Slamannan Plateau, Denny Hills)

Areas of Visual Sensitivity

7.2.3 The Landscape Capacity Study undertaken to inform the previous wind energy SPG identifies the following areas of visual sensitivity identified in Map 10 below:

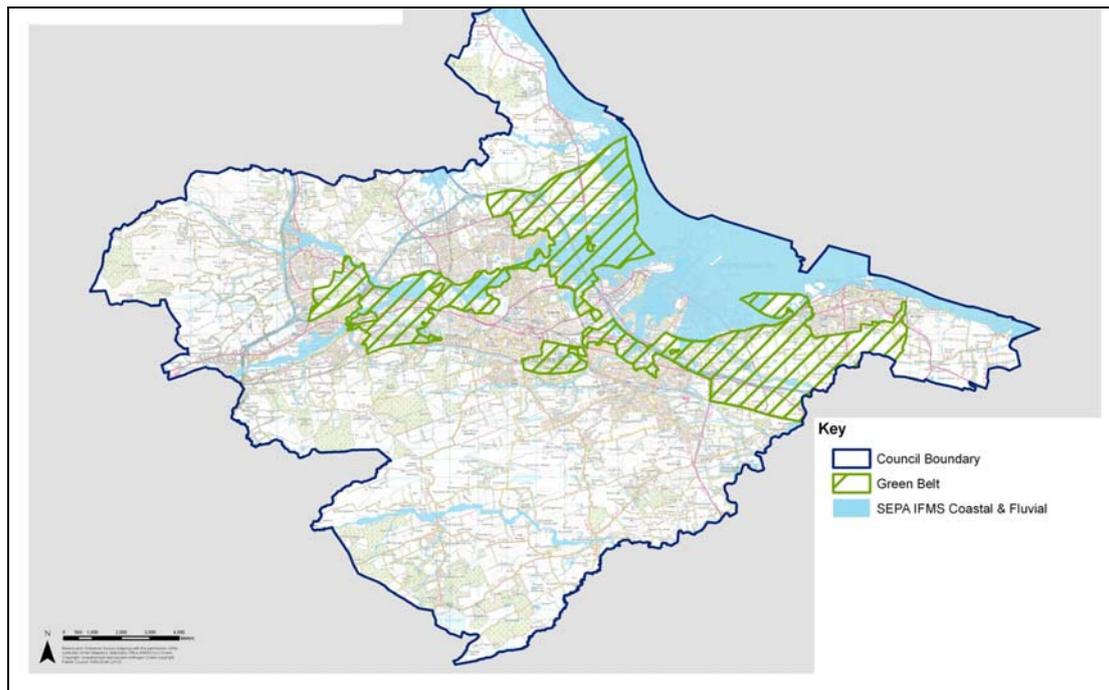
- Antonine Wall World Heritage Site and Buffer Zone;
- Important Ridgelines;
- Iconic, Important and Key Views.



Map 7: Areas of Visual Sensitivity

Green Belts

7.2.4 Green Belts have been designated since 1962, and their coverage has expanded since. They tend to form a network of wedges of varying widths rather than a continuous 'belt'. They act to separate Falkirk from Grangemouth, Larbert and Carronshore; Grangemouth from Polmont /Laurieston and Bo'ness; and Bo'ness from Polmont/Linlithgow. There are further areas at Callendar Park/Wood and east of Stenhousemuir. The Structure Plan identifies further Green Belt between Denny and Bonnybridge and Bonnybridge and Falkirk. Map 11 shows the areas of greenbelt within the Council area.



Map 8: Greenbelt Areas

7.2.5 Green Belt is under particular commercial development pressure, particularly the main area of designation which follows the M9/M876 corridor.

7.3 Likely Future Changes without the Implementation of the Plan

7.3.1 The spatial framework contained within SPP indicates that landscape character areas; special landscape areas; areas of visual sensitivity; greenbelt and areas with cumulative visual impacts from windfarms are all areas with potential for wind farm development where wind farms are likely to be acceptable subject to detailed consideration against identified policy criteria.

7.3.2 Policy RW01 of the LDP indicates that landscape and visual impacts and impacts on greenbelt objectives are two of the factors against which applications for wind energy development will be assessed. Policy GN02 “Landscape” of the LDP indicates that the Council will seek to protect and enhance landscape character and quality in accordance with SG09 “Landscape Character and Assessment”. Without the SG therefore impacts on Landscape Character Areas and Special Landscape Areas caused by wind energy developments will be assessed in accordance with SG09. This could lead to some confusion about how to apply SG09 to applications for wind energy developments but should still minimise the negative effects on landscape character areas and special landscape areas caused by wind energy development.

7.3.3 Policy CG02 “Greenbelt” sets out what the purpose of a greenbelt is and indicates that development within the greenbelt will not be permitted unless it can be demonstrated that it will not undermine the strategic purpose of the green belt. This could be interpreted as being the detailed criteria which

the spatial framework in the SPP indicates that windfarms in the greenbelt will have to be considered against

7.3.4 Although Policy RW01 of the LDP indicates that visual impacts are one of the factors to be taken into account in the assessment of applications for wind energy development it does not provide any details as to where the main areas of visual sensitivity are or the level of protection afforded to them. Some of the areas of visual sensitivity are protected through LDP policies which require protection of the setting of the cultural heritage features e.g. Blackness Castle and the Antonine Wall World Heritage Site, others have no established level of policy protection. In the absence of the SG therefore wind energy developments may cause significant negative effects due to visual impacts on key viewpoints from Falkirk Wheel, Tacmadoon, Cockleroy, Cairnpaple and Blaworn Moss.

7.4 Current Environmental Protection Objectives

7.4.1 The following plans programmes and strategies have been reviewed to gain a full understanding of the environmental objectives for this topic area:

- Council of Europe, European Landscape Convention (2000)
- SNH Landscape Policy Framework
- SNH Wildness in Scotland's countryside
- SNH Natural Heritage Futures
- SNH National Scenic Areas Programme
- A Vision for Scottish Agriculture

7.4.2 Landscape policies aim to not only safeguard protected areas, but to recognise and conserve wider landscapes. These may not be formally designated but make an important contribution to the quality of environment.

7.4.3 Agricultural policy sets a target of increasing forest cover to 25% of land cover.

7.5 How Objectives Have Been Taken into Account

7.5.1 In order to undertake a process of environmental assessment the current environmental protection objectives have been translated into a set of SEA objectives and assessment questions with which to assess each component of the SG. SEA objectives for the landscape topic are shown in the table below:

SEA Objectives	Assessment Questions
<ul style="list-style-type: none"> • Protect the distinctive character of the landscape and ensure new wind energy development does not exceed the capacity of the landscape to accommodate it. • Ensure the strategic purpose of 	<ul style="list-style-type: none"> • Does the option protect the distinctive character of the landscape? • Will the implementation of the option lead the capacity of the landscape being exceeded?

<p>the greenbelt is not undermined.</p> <ul style="list-style-type: none"> • Ensure that areas of visual sensitivity are protected from inappropriate development. 	<ul style="list-style-type: none"> • Does the option undermine the strategic purpose of the greenbelt? • Does the option protect areas of visual sensitivity from inappropriate development?
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Table 6: Landscape – SEA Objectives and Assessment Questions

7.5.2 The results of assessment are shown in section 5 and appendix 2 of the Environmental Report.

**SG14 – Spatial Framework and Guidance for Wind Energy Development
Strategic Environmental Assessment
Environmental Report**

Appendix 2 – Detailed Environmental Assessment Matrices

Scope of Assessment

Environmental Assessment of the SG will be focused on the environmental effects of the policy choices the SG itself has to make. These are as follows:

- The minimum scale of onshore wind development that the spatial framework is intended to apply to;
- The size of buffer zone around the towns and villages identified within the LDP which will be defined as an area of significant protection within which visual impact will be considered;
- The criteria set out in the guidance that will be considered when deciding if a development is necessary to meet a local or national need
- The criteria set out in the guidance that will be considered in deciding applications for wind farms of different scales within this buffer zone; and
- The criteria set out in the guidance that will be considered in deciding applications for wind farms of different scales within the different landscape character areas and special landscape areas across the Council area.

The Environmental Report assesses the preferred approaches to these policy choices as outlined in the SG and a number of reasonable alternatives to show what effect they would have on the environment.

The detailed assessment matrices contain the results of the environmental assessment which has been generated by assessing performance of the preferred approaches and their reasonable alternatives against the SEA objectives for each environmental topic area by asking specific assessment questions. These are detailed comprehensively within the Environmental Baseline Report (Appendix 1) and are repeated below for ease of reference:

Environmental Topic Area	Environmental Sub-Topic	SEA Objectives	Assessment Questions
Biodiversity, Flora and Fauna	<ul style="list-style-type: none"> • Designated Sites • Ancient, Long Established and Natural Woodland 	<ul style="list-style-type: none"> • Demonstrate no adverse effect on the integrity of Natura 2000 sites.. • Protect and enhance Sites of Special Scientific Interest and Wildlife Sites • Protect and enhance other locally designated sites of biodiversity value • Protect ancient, long established and semi natural woodlands as a habitat resource of irreplaceable value 	<ul style="list-style-type: none"> • Can it be demonstrated that the option will have no adverse effect on the integrity of Natura 2000 sites? • Does the option protect and enhance SSSI and/or Wildlife Sites? • Does the option protect and enhance locally designated sites of biodiversity value? • Does the option protect ancient, long established and semi natural woodland?
Population and Human Health	<ul style="list-style-type: none"> • Human Health • Waste Peat 	<ul style="list-style-type: none"> • Prevent risk to human health through increased impacts from ice throw and shadow flicker. • Avoid increasing noise nuisance • Avoid the increased production of waste peat 	<ul style="list-style-type: none"> • Does the increase the risk to human health from ice throw and shadow flicker? • Does the option increase noise nuisance? • Does the option increase the production of waste peat?
Soil	<ul style="list-style-type: none"> • Carbon Rich and Rare Soil 	<ul style="list-style-type: none"> • Protect carbon rich soils and other rare soils 	<ul style="list-style-type: none"> • Does the option protect carbon rich soils and other rare soils (basin peat, blanket bog, peat alluvium complex, peaty podzols, peaty gleys, podzols, humus iron podzols and saltings)? • Does the option safeguard against the release of green house gasses and carbon from soils?

Material Assets	<ul style="list-style-type: none"> • Wind Energy Generation 	<ul style="list-style-type: none"> • Maximise the contribution that the Falkirk Council area makes towards meeting the Scottish Government's target of sourcing 100% of electricity demand from renewable energy generation by 2020. 	<ul style="list-style-type: none"> • Does the option improve the ability of the Falkirk Council area to assist in meeting the Scottish Government's target of sourcing 100% of electricity demand from renewable energy generation by 2020?
Cultural Heritage	<ul style="list-style-type: none"> • World Heritage Sites • Scheduled ancient monuments • Listed buildings • Gardens and designed landscapes • Historic Battlefields • Conservation Areas 	<ul style="list-style-type: none"> • Protect the historic environment. 	<ul style="list-style-type: none"> • Will the Frontiers of the Roman Empire (Antonine Wall) World Heritage Site and/or its setting be adversely impacted? • Will any scheduled monument and/or its setting be adversely impacted? • Will any listed building and/or its setting be adversely impacted? • Will the setting of a conservation area be adversely impacted? • Will a Historic Garden or Designed Landscape and/or its setting be adversely impacted? • Will any Historic Battlefield and/or its setting be adversely impacted?
Landscape	<ul style="list-style-type: none"> • Landscape Character • Special Landscape Areas • Green Belts • Areas of Visual Sensitivity 	<ul style="list-style-type: none"> • Protect the distinctive character of the landscape and ensure new wind energy development does not exceed the capacity of the landscape to accommodate it. • Ensure the strategic purpose of the greenbelt is not undermined. • Ensure that areas of visual sensitivity are protected from inappropriate development. 	<ul style="list-style-type: none"> • Does the option protect the distinctive character of the landscape? • Will the implementation of the option lead the capacity of the landscape being exceeded? • Does the option undermine the strategic purpose of the greenbelt? • Does the option protect areas of visual sensitivity from inappropriate development?

Table 1: SEA Objectives and Assessment Questions

Scoring

The following scoring system has been applied

Effect	Annotation
Significant Negative Effect	--
Negative Effect	-
Neutral or negligible effect	N
Unknown effect	?
Positive effect	+
Significant Positive effect	++

Table 2: SEA scoring system

For each alternative, a commentary has been added to detail how the conclusions of the environmental assessment have been reached. Table 3 below shows how the significance of environmental effects which have been identified under each topic area has been determined.

Environmental Effect	--	-	+	++
Environmental Topic				
Biodiversity	<ul style="list-style-type: none"> • Likely significant negative effect on SPA • Likely adverse effect on the integrity of SSSI, LNR, Wildlife Sites or SINC • Likely adverse effect on an area of ancient, long-established or semi-natural woodland. 	<ul style="list-style-type: none"> • Minor residual negative effect on SPA • Loss of important habitat 		
Population and Human Health	<ul style="list-style-type: none"> • Significant adverse impacts on human health due to increased shadow flicker; impacts from ice throw; nuisance noise and generation of waste peat 	<ul style="list-style-type: none"> • Adverse impact on human health due to increased shadow flicker; impacts from ice throw; nuisance noise and generation of waste peat 		
Soil	<ul style="list-style-type: none"> • Impact on carbon rich or soils 			
Material Assets	<ul style="list-style-type: none"> • Significant restriction to the potential for wind energy development across the Council area 	<ul style="list-style-type: none"> • Restriction to the potential for wind energy development across the Council area 	<ul style="list-style-type: none"> • Increase in potential for wind energy development across the Council area 	<ul style="list-style-type: none"> • Significant increase in potential for wind energy development across the Council area
Cultural Heritage	<ul style="list-style-type: none"> • Potential significant adverse impact on an important element of cultural heritage • Potential impact on the setting of the Antonine Wall World Heritage Site 	<ul style="list-style-type: none"> • Potential adverse impact on an important element of cultural heritage 		
Landscape	<ul style="list-style-type: none"> • Significant adverse impact on the distinctive character of the landscape • Significant breach of the capacity of the landscape to accommodate 	<ul style="list-style-type: none"> • Adverse impact on a visually sensitive area • Adverse impact on landscape character • Adverse impact on the landscape setting of settlements 		

Environmental Effect	--	-	+	++
Environmental Topic				
	<ul style="list-style-type: none"> development • Significant adverse effect on the landscape setting of settlements • Significant adverse impact on areas of visual sensitivity 			

Table 3: Examples of environmental effects of different significance

It should be noted that the positive environmental effects that wind energy development can provide through: reducing the release of industrial pollutants and greenhouse gasses from fossil fuel based electricity generation; and increasing the capacity for renewable energy generation are recognised. These positive environmental effects will not result from the implementation of this SG but are attributable to the implementation of Policy RW01 Renewable Energy of the Falkirk Local Development Plan which generally support proposals for the generation of energy from renewable sources.

Alternative	Biodiversity Flora & Fauna	Population & Human Health	Soil	Material Assets	Cultural Heritage	Landscape	Comments (including information on short, medium, long term; permanent, temporary; secondary, cumulative, synergistic effects)	Proposed changes to the PPS or proposed mitigation/enhancement
Scale Option 1 Wind turbines over 30m in height	-	-	-	++	-	-	<p>Wind turbines above 30m to blade tip in height account for 62.5% of the total number of approved wind turbines in the Falkirk Council area and 99.5% of the total approved power output. They also account for 71.7% of the total number of wind turbines which have been considered for approval and 99.3% of the total power output of wind turbines which have been considered for approval.</p> <p>Assuming that the application of the spatial framework will create a more permissive policy environment for wind energy developments to take place, then setting a low threshold for wind energy developments to be included within the spatial framework will have a significant positive effect on material assets (through increasing the amount of wind energy capacity across the Council area) a significant negative effect on biodiversity (through impact on Natura 2000 supporting habitat, locally designated nature conservation sites and ancient, long established and semi natural woodland) population and human health (through impacts on human health due to increased shadow flicker; impacts from ice throw; nuisance noise and generation of waste peat) soil (through impact on carbon rich and rare soil) cultural heritage (through impact on the setting of the Antonine Wall WHS; impact on scheduled ancient monuments and their setting; impact on listed buildings and their setting; and impact on conservation areas and their setting) and landscape (through impact on the distinctive character of the landscape; breaching the capacity of the landscape to accommodate development; undermining the strategic purpose of the greenbelt and adversely affecting areas of visual sensitivity)</p>	<p>Increasing the height threshold would reduce the number of wind turbines which would be assessed against the more permissive policy environment of the spatial framework and reduce the magnitude of negative effects on biodiversity, population and human health, soil, cultural heritage and landscape. This would also reduce the magnitude of positive effects on material assets. Care will be needed to strike the right balance.</p>

<p>Scale Option 2 Wind turbines over 50m to tip in height</p>	-	-	-	++	--	--	<p>Wind turbines above 50m to blade tip in height account for 39.6% of the total number of approved wind turbines in the Falkirk Council area and 95.4% of the total approved power output. They also account for 43.5% of the total number of wind turbines which have been considered for approval and 94.0% of the total power output of wind turbines which have been considered for approval.</p> <p>In comparison with option 1 above, significantly fewer wind turbine developments would be assessed against the more permissive policy environment of the spatial framework, this will reduce the magnitude of negative effects on biodiversity, population and human health and soil. Negative effects on cultural heritage and landscape will also be reduced but will remain significant as taller turbines tend to have a greater impact on the setting of cultural heritage features and the distinctive character of the landscape.</p> <p>Whilst the total power output of wind turbine developments which would be assessed against the more permissive policy environment of the spatial framework would be less than in option 1 above, it is still above 90% so positive effects on material assets will remain significant.</p>	<p>Based on previous applications for wind turbine developments in the Falkirk Council area a threshold of 70m to blade tip is suggested as the optimum threshold above which the spatial framework will apply.</p> <p>Wind turbines above 70m to blade tip in height account for 39.6% of the total number of approved wind turbines in the Falkirk Council area and 95.4% of the total approved power output. They also account for 38.0% of the total number of wind turbines which have been considered for approval and 91.4% of the total power output of wind turbines which have been considered for approval.</p> <p>Setting the threshold at this level would ensure that the number of turbines subject to the more permissive policy environment of the spatial framework was minimised whilst ensuring that the total power output of turbines subject to the more permissive policy environment was above 90%.</p> <p>Regardless of the level the threshold is set at a more permissive policy environment for taller turbines is likely to have significant negative effects on cultural heritage and landscape. The only way of reducing the significant of negative effects in these areas would be to set the level at a height which was above the vast majority of wind turbine development applications. Doing this would significantly reduce the significant positive effects on material assets so is not recommended.</p> <p>Significant negative effects on cultural heritage will be mitigated by applying criteria set out in policies D07; D08; D09 and D10 of the LDP.</p> <p>Developing guidance for wind energy development and setting out the detailed criteria which wind energy development will be subject to will help to further mitigate negative environmental effects, however, in developing that guidance care will be needed to ensure that it does not depart from the general guidance of the spatial framework i.e. wind energy developments may be appropriate in some circumstances in group 2 areas and wind energy developments are likely to be acceptable subject to detailed consideration against identified policy criteria in group 3 areas.</p>
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<p>Scale Option 3 Wind turbines over 100m in height</p>	-	-	-	+?	--	--	<p>Wind turbines above 100m to blade tip in height account for 37.5% of the total number of approved wind turbines in the Falkirk Council area and 93.3% of the total approved power output. They also account for 31.5% of the total number of wind turbines which have been considered for approval and 85.6% of the total power output of wind turbines which have been considered for approval.</p> <p>In comparison with option 2 above, marginally fewer wind turbine developments would be assessed against the more permissive policy environment of the spatial framework, this will further reduce the magnitude of negative effects on biodiversity, population and human health and soil. Negative effects on cultural heritage and landscape will also be reduced but will remain significant as taller turbines tend to have a greater impact on the setting of cultural heritage features and the distinctive character of the landscape.</p> <p>The total power output of wind turbine developments which would be assessed against the more permissive policy environment of the spatial framework would be less than in option 1 and 2 above, it could even drop under 90% so positive effects on material assets may reduce below the level of being significant.</p>	<p>The threshold should probably be set a little lower than 100m</p>
<p>Buffer Zone Size Option 1 No buffer zone</p>	N	N	N	N	--	--	<p>By not providing a community separation area around towns and villages, wind turbine developments could have a significant negative effect on cultural heritage (through impacting on the setting of the Antonine Wall World Heritage Site, Sites on the inventory of historic battlefields, listed buildings and conservation areas) and landscape (through exposing areas of visual sensitivity to inappropriate development and undermining the strategic purpose of the greenbelt through adversely impacting on the landscape setting of settlements)</p>	
<p>Community Separation Zone Size Option 2 Based on an assessment of landform and other features which restrict views out from the settlement. i.e. 2km from Falkirk; Larbert; Stenhousemuir; Skinflats; Torwood; Denny; Bonybridge; Banknock; Laurieston; Polmont; Maddiston; Bo'ness; Muirhouses; Blackness; Airth; Letham; Dumore; South Alloa and north of Slamannan. 1.5 km from Whitecross and the Loan. 1km from Grangemouth; Shieldhill; California; Standburn; Avonbridge; Limerigg and east, west and south of Slamannan.</p>	N	N	N	--	-	-	<p>By defining a community separation zone around towns and villages for the consideration of visual impact a more restrictive policy environment is being created than would exist if no community separation area were to be defined. Significant negative effects on material assets (through restricting the potential for renewable power generation) are recorded. 71.1% of wind energy development applications within the Falkirk Council area which have been considered through the planning process are within the proposed separation areas.</p> <p>Through defining community separation zones based on an assessment of landform and other features which restrict views out from the settlement, negative effects on cultural heritage and landscape identified in option 1 above will be reduced. Negative effects remain as the 2km upper limit for the community separation distance imposed by SPP is not enough to prevent those effects from occurring or reducing them to the point that they are negligible.</p>	<p>The magnitude of significant negative effects on material assets could be reduced through sensitive definition of the criteria to be applied to wind energy developments within the defined community separation distance.</p>
<p>Buffer Zone Size Option 3 2km community separation zone around all settlements</p>	N	N	N	--	-	-	<p>In comparison to option 2 above the magnitude of significant negative effects on material assets will be increased. 78.9% of wind energy development applications within the Falkirk Council area which have been considered through the planning process are within 2km of LDP defined urban limits.</p> <p>Negative effects on cultural heritage and landscape will not be reduced any further than option 2 above as the community separation areas had already been calibrated based on an assessment of landform and other features which restrict views out from the settlement.</p>	<p>Chose option 2</p>

<p>Local or National Need Option 1 LDP policy approach always takes precedence despite the “is likely to be acceptable” wording in the SPP.</p>	<p>--</p>	<p>N</p>	<p>--</p>	<p>-?</p>	<p>N</p>	<p>N</p>	<p>There are two policy areas where LDP policy is more restrictive than the approach set out in the spatial framework.</p> <p>1. The spatial framework indicates that wind energy developments affecting locally designated nature conservation sites are <i>“likely to be acceptable subject to detailed consideration against identified policy criteria”</i>. Whereas policy GN03 of the LDP indicates that development <i>“will not be permitted unless it can be demonstrated that the overall integrity of the site, habitat or species is not compromised, or any adverse effects are clearly outweighed by economic benefits of substantial local importance”</i></p> <p>2. The spatial framework indicates that: carbon rich soils are areas of significant protection where wind farms <i>“may be appropriate in some circumstances”</i> where <i>“significant effects ... can be substantially overcome by siting, design, or other mitigation.”</i>; and wind energy developments affecting rare soils are <i>“likely to be acceptable subject to detailed consideration against identified policy criteria”</i>. Whereas policy RW04 of the LDP indicates that development affecting carbon rich or rare soils <i>“will not be permitted unless...development of the site is necessary to meet an overriding local or national need where no other suitable site is available.”</i></p> <p>It is arguable whether it would be reasonable to allow the LDP policy approach to take precedence over the approach over that set out in the spatial framework.</p> <p>The Revised Environmental Report of the LDP indicates that policies GN03 and RW04 will reduce the frequency of wind energy developments causing significant negative effects on biodiversity and soil but will still allow these effects to occur as the terms “economic benefits of substantial local importance” and “development necessary to meet an overriding local or national need” have not been adequately defined.</p> <p>Wildlife Sites, Sites of Importance for Nature Conservation and Local Nature Reserves cover 2346.5ha (7.5%) of the Council area. Peat, carbon rich soils and other rare soils cover approximately 4236ha (13.5%) of the Council area. In combination therefore, this alternative would mean that wind energy developments on 21% of Council land would be subject to a more restrictive policy approach. As the terms “economic benefits of substantial local importance and “development necessary to meet an overriding local or national need” have not been defined in the LDP or this SG negative effects of an unknown magnitude (through reduction in the potential for wind energy development) are therefore predicted.</p>	<p>The SG should define the terms: “economic benefits of substantial local importance”; and “development necessary to meet an overriding local or national need.”</p> <p>A tight definition of these terms could reduce the magnitude of predicted negative effects on biodiversity and soil.</p>
<p>Local or National Need Option 2 If the development is above the spatial framework threshold then it “is likely to be acceptable” if it is below the spatial framework threshold then LDP policy approach will take precedence</p>	<p>--</p>	<p>N</p>	<p>--</p>	<p>+?</p>	<p>N</p>	<p>N</p>	<p>Using the spatial framework threshold as a proxy for wind energy development which is considered to have economic benefits of substantial local importance and is necessary to meet an overriding local or national need would be a simple way of resolving the policy conflict between the SPP spatial framework and LDP policy.</p> <p>Using this approach, the scale and frequency of negative effects on biodiversity and soil would be directly related to the spatial framework threshold. Whichever threshold was chosen, applying this alternative would create a more permissive policy environment for a proportion of wind energy development applications and would therefore have a positive effect on material assets (through increasing the potential for generation of energy from renewable sources).</p> <p>This alternative would also have significant negative effects on biodiversity (through adversely impacting on local nature conservation sites) and soil (through adversely impacting on carbon rich and rare soils)</p>	

<p>Local or National Need Option 3: If the development is above the threshold required for the application to be considered under section 36 of the Electricity Act then it will be considered to have “economic benefits of substantial local importance” and be a “development necessary to meet an overriding local or national need”</p>	-		-	--			<p>Wind energy development applications need to be of above 50MW to be considered under the Section 36 of the Electricity Act.</p> <p>Historically there have not been any applications for wind energy developments of above 50MW in the Falkirk Council area. If this past activity is an indicator of future trends then it is unlikely that a wind energy development application will come forward which will be able to justify adverse effects on a locally designated nature conservation site or carbon rich or rare soil.</p> <p>Wildlife Sites, Sites of Importance for Nature Conservation and Local Nature Reserves cover 2346.5ha (7.5%) of the Council area. Peat, carbon rich soils and other rare soils cover approximately 4236ha (13.5%) of the Council area. In combination therefore, this alternative would mean that wind energy developments on 21% of Council land would be subject to an extremely restrictive policy approach which would therefore cause significant negative effects on material assets (through restricting the potential to generate energy from renewable sources.)</p>	
<p>Community Separation Zone Criteria Option 1 Wind turbines of above 50m within the community separation areas will be required to specifically address the potential for visual impact from the settlement edge, and within the settlement.</p>	N	N	N	?	N	?	<p>The Spatial Framework in SPP indicates that within the defined community separation zones, windfarms may be appropriate in some circumstances.</p> <p>In circumstances where a wind energy development of above 50m is proposed within a community separation zone applicants will be required to specifically address the potential for visual impact from the settlement edge and within the settlement.</p> <p>It is not possible to assess the effect of this option on the potential to generate energy from renewable sources or the effect on the landscape setting of settlements as no specific criteria have been defined against which to assess applications for wind energy development</p>	<p>More specific criteria should be introduced to outline what level of visual impacts will be tolerated within community separation areas</p>
<p>Community Separation Zone Criteria Option 2 Wind turbines of above 50m within the community separation areas will not be approved unless they demonstrate that visual impacts from viewpoints along the affected settlement edge are not significantly adverse</p>	N	N	N	--	N	-	<p>The Spatial Framework in SPP indicates that within the defined community separation zones, windfarms may be appropriate in some circumstances.</p> <p>In circumstances where a wind energy development of above 50m is proposed within a community separation zone applicants will be asked to submit information showing that visual impacts from viewpoints along the settlement edge are not significantly adverse.</p> <p>Of 38 wind energy development applications which have been considered through the planning process 23.7% of them were within the community separation zones set out in the community separation distance zone option 2 above and above 50m to blade tip. Of the 13 wind energy development applications which have been considered through the planning process which are above 50m in height 69.2% of them were within the community separation distances set out in the community separation zone size option 2 above. The effect of this alternative would therefore be likely to have a significant negative effect on material assets (through restricting the potential for energy generation from renewable sources) There would also be a negative effect on landscape (through adversely affecting the landscape setting of settlements thereby undermining the strategic purpose of the greenbelt) as turbines of over 50m within community separation distances with moderate visual impacts on viewpoints along the settlement edge would still be permissible.</p>	

<p>Community Separation Zone Criteria Option 3 Wind turbines of above 50m within the community separation areas will not be approved unless they demonstrate that visual impacts from viewpoints along the affected settlement edge are not significantly or moderately adverse</p>	N	N	N	--	N	N	<p>In comparison with option 1 above the magnitude of significant negative effects on material assets will increase. Effects on landscape will be neutral/ negligible as only turbines of over 50m with minimal visual impacts on viewpoints along the settlement edge would be permissible.</p>											
<p>Community Separation Zone Criteria Option 4 Wind turbines of above 50m within the community separation areas will not be approved.</p>	N	N	N	--	N	N	<p>In comparison with option 2 above the magnitude of significant negative effects on material assets will increase. Effects on landscape will be neutral as no turbines of over 50m would be permissible.</p>											
<p>Landscape Criteria Option 1: A landscape objective of protection and accommodation will be pursued in landscape character areas with Low and Moderate-Low potential to accommodate wind energy developments. And a landscape objective of accommodation/ change will be pursued in landscape character areas with Moderate and Moderate-High potential to accommodate wind energy developments.</p>	N	N	N	--	N	--	<table border="1" data-bbox="1032 699 2000 940"> <tr> <td>Potential Capacity for wind energy developments</td> <td>Percentage of wind energy development applications which have been considered through the planning system in the Falkirk Council area</td> </tr> <tr> <td>Low</td> <td>0%</td> </tr> <tr> <td>Moderate-Low</td> <td>39.5%</td> </tr> <tr> <td>Moderate</td> <td>55.3%</td> </tr> <tr> <td>Moderate-High</td> <td>5.3%</td> </tr> </table> <p>Of the 38 wind energy development applications which have been considered through the planning system in the Falkirk area 60.5% of them were within landscape character areas with moderate and moderate-high capacity for wind energy development. This means that 39.5% of wind energy development applications were within landscape character areas with low and moderate-low capacity for wind energy development.</p> <p>This alternative sets the landscape objectives at level lower than would be necessary to protect the distinctive character of the environment therefore significant negative effects on landscape are recorded. Significant negative effects on material assets (through restricting potential for energy generation from renewable sources) are also recorded as a significant proportion of wind energy development applications have historically been made in landscape character areas with a protection and accommodation landscape objective.</p>	Potential Capacity for wind energy developments	Percentage of wind energy development applications which have been considered through the planning system in the Falkirk Council area	Low	0%	Moderate-Low	39.5%	Moderate	55.3%	Moderate-High	5.3%	<p>The only way to mitigate significant negative effects on material assets to non significant levels would be to only pursue a landscape objective of protection within landscape character areas with low potential for wind energy developments and to pursue a landscape objective of accommodation/ change within landscape character areas with higher capacity for wind energy developments.</p> <p>As this would inevitably lead to very significant negative effects on landscape which are unlikely to be politically acceptable this has not been considered as a reasonable alternative.</p>
Potential Capacity for wind energy developments	Percentage of wind energy development applications which have been considered through the planning system in the Falkirk Council area																	
Low	0%																	
Moderate-Low	39.5%																	
Moderate	55.3%																	
Moderate-High	5.3%																	
<p>Landscape Criteria Option 2: A landscape objective of: protection will be pursued in landscape character areas with Low potential to accommodate wind energy developments; protection and accommodation will be pursued in landscape character areas with Moderate-Low and Moderate potential to accommodate wind energy developments; and protection, accommodation/ change will be pursued in landscape character areas with Moderate-High potential to accommodate wind energy developments.</p>	N	N	N	--	N	-	<p>In this alternative all landscape character areas are subject to some degree of protection, this will have a significant negative effect on material assets (through restricting the potential to generate energy from renewable sources). The landscape objectives of this alternative have been calibrated to ensure that the distinctive character of the landscape is protected whilst allowing a small amount of landscape change in areas of moderate-high capacity negative effects on landscape are predicted.</p>	<p>Significant negative effects on material assets cannot be mitigated without causing significant negative effects on landscape.</p>										

Landscape Criteria Option 3 Low and Low – Moderate (Protection) Moderate and Moderate High (Protection and Accommodation)	N	N	N	--	N	-	In comparison to option 2 above the magnitude of significant negative effects on material assets will increase and the magnitude of negative effects on landscape will reduce. Negative effects on landscape will still occur as a landscape objective of accommodation will still apply to landscape character areas which have historically accounted for 60.5% of wind energy development applications.	
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**SG14 – Spatial Framework and Guidance for Wind Energy Development
Strategic Environmental Assessment
Environmental Report**

Appendix 3 – Detailed Monitoring Proposals

SEA Objectives	Monitoring Proposed	Rationale	Methods & Measures
Biodiversity, Flora and Fauna			
Demonstrate no adverse effect on the integrity of Natura 2000 sites	Appropriate Assessments carried out for applications for wind energy development	If the Habitats Regulations Appraisal procedure is carried out correctly then wind energy developments which have a likely significant effect on Natura 2000 sites will have to go through a procedure of appropriate assessment	Liaison with Development Management and SNH
Protect and enhance Sites of Special Scientific Interest and Wildlife Sites	Number of Local Nature Reserves designated	A reduction in the number of these sites will indicate that they are not being safeguarded	Existing Development Plan Monitoring Report indicator
Protect and enhance other locally designated sites of biodiversity value.	Overall area and number of ecological sites protected by local/national designations	A reduction in the number or extent of these sites will indicate that they are not being safeguarded	Existing Development Plan Monitoring Report indicator
	Loss/damage to ecological sites	The less damage caused to ecological sites the better they are being safeguarded	Existing Development Plan Monitoring Report indicator
Protect ancient, long established and semi-natural woodlands as a habitat or irreplaceable value	Area of ancient, long established and semi natural woodlands lost to wind energy development	If none of these areas are lost then the objective will be being met	Liaison with Development Management
Population and Human Health			
Prevent risk to human health through increased impacts from ice throw and shadow flicker.	No monitoring proposed	Risk to human health from ice throw and shadow flicker is to be prevented through applying set back distances for wind turbines to paths, roads, homes, businesses and community facilities. If these are applied then increased impacts should not occur.	
Avoid increasing noise nuisance	Noise nuisance complaints associated with wind energy	If noise nuisance complaints do not increase then this SEA objective will be met	Liaison with the Council's Environmental Health officers.

SEA Objectives	Monitoring Proposed	Rationale	Methods & Measures
	developments.		
Avoid the increased production of waste peat	Volume of waste peat produced.	If no waste peat is being produced as a result of wind energy development then this objective will be met	Liaison with SEPA
Soil			
Protect carbon rich soils and other rare soils	Impacts on carbon rich or rare soils identified in EIA and other environmental studies accompanying wind energy development applications.	Through monitoring the impacts of different developments on carbon rich and rare soil an impression of whether they are being protected sufficiently will be able to be formed.	Desktop analysis of sites allocated within the LDP.
Material Assets			
Maximise the contribution that the Falkirk Council area makes towards meeting the Scottish Government's target of sourcing 100% of electricity demand from renewable energy generation by 2020.	Electricity generation capacity of wind energy developments consented within the Council area	Monitoring the amount of electricity generated from wind energy development in the Council area will allow Falkirk's contribution towards the government's target to be tracked. Monitoring whether this contribution is maximised will not be possible	Liaison with development management
	Percentage of annual electricity consumption in Scotland and Falkirk which is produced by wind energy electricity generation in Falkirk	Monitoring the amount of electricity generated from wind energy development in the Council area will allow Falkirk's contribution towards the government's target to be tracked. Monitoring whether this contribution is maximised will not be possible	Department of Energy and Climate Change statistics. Liaison with development management.
Cultural Heritage			
Protect the historic environment.	Number of planning consents granted for wind energy developments where the Antonine Wall WHS, scheduled ancient	If this number is very low then it can be assumed that the historic environment is being adequately protected.	Through liaison with the Development Management unit and Historic Scotland

SEA Objectives	Monitoring Proposed	Rationale	Methods & Measures
	monuments, inventory battlefields and/or gardens and designated landscapes are affected.		
Landscape			
Protect and enhance the distinctive character of the landscape and ensure new wind energy development does not exceed the capacity of the landscape to accommodate it.	Landscape Capacity Studies	The landscape capacity study undertaken to inform the consultative draft SG identified landscape capacity for wind energy development for all landscape character units within the Council area. Any future wind energy developments within these area will be likely to affect their landscape capacity which any future revised landscape capacity study should detect.	No further landscape capacity studies are planned in the near future given the resources involved in undertaking the first one. As more wind energy developments are consented and become operational there may be a growing demand to review the first landscape capacity study
	Number of wind energy developments constructed in different landscape character units (LCU)	LCU have different capacities for wind energy development. By monitoring the number of wind energy developments constructed within each LCU an impression of the likelihood of a breach of capacity can be formed	Liaison with development management
	Number of wind energy developments refused planning permission in different landscape character units (LCU)	Some LCU are more sensitive to wind energy development than others. By monitoring the number of wind energy developments refused in different landscape character units (LCU) an impression should be formed of the level of protection they are being afforded by the planning system.	Liaison with development management
Ensure the strategic purpose of the greenbelt is not undermined.	Number of wind energy developments permitted which contravene green belt policy.	One of the caveats of policy CG02 of the LDP is that development will be permitted unless it can be demonstrated that it does not undermine and of the strategic purposes	Liaison with development management

SEA Objectives	Monitoring Proposed	Rationale	Methods & Measures
		<p>of the Green Belt. One of the strategic purposes of the greenbelt is to protect the landscape setting of settlements. If wind energy developments contravene green belt policy it is most likely that this is because they have an adverse effect on the landscape setting of settlements, therefore if no applications contravene greenbelt policy, this objective will be met.</p>	
<p>Ensure that areas of visual sensitivity are protected from inappropriate development.</p>	<p>Identified impact of wind energy development on iconic, important and key views as identified in the SG</p>	<p>If wind energy developments are not causing significant impact on the iconic, important and key views identified within the SG then this objective will be met.</p>	<p>Analysis of Landscape and Visual Impact Assessments submitted with wind energy development applications and liaison with development management</p>

**SG14 – Spatial Framework and Guidance for Wind Energy Development
Strategic Environmental Assessment
Environmental Report**

Appendix 4 – Record of Scoping Comments

Consultation Authority	Comment	Response
Historic Scotland (HS)	<p>Scope of assessment and level of detail – We welcome that our comments of 24 June 2014 at the screening stage for this assessment have been taken into account. Subsequently, we note that the historic environment is scoped into the assessment and we are content to agree with this. The scoping report clearly sets out the proposed approach to the assessment, detailing which elements of the guidance will be subject to assessment. Overall we are content to agree with the approach outlined.</p>	Comment noted.
HS	<p>Consultation period for the Environmental Report – We are content to agree with the 6 weeks period of consultation on the environmental report. It should be noted that supplementary guidance and accompanying environmental report should both be available for expressions of opinion as they form the relevant documents for consultation.</p>	Comment noted.
HS	<p>Section 1.3.2 – 1.3.5 - We welcome the clarification in this section regarding those elements of the guidance that the assessment will be particularly focused on. The approach to alternatives is acceptable and the matrix that is proposed for presenting findings is welcome. The mitigation section of this matrix will be particularly important when considering group 3 environmental assets.</p>	Comments noted.
HS	<p>Section 9.1.3 and 9.2.13 - For clarification, the Inventory of Historic Battlefields now comprises of 39 sites, of which the Battle of Linlithgow Bridge is one. We would therefore advise that the environmental baseline be updated. Further details on this site can be found at: http://ddata.historicscotland.gov.uk/pls/htmlldb/f?p=2500::15:0:::BATTLEFIELD:linlithgowbridge</p>	This element of the environmental baseline has been updated within the Environmental Baseline Report (Appendix 1 of the

		Environmental Report)
HS	<p>9.4 Scope - As this section notes, SPP sets out the level of protection to be afforded to certain historic environment assets in the preparation of the spatial strategy (World Heritage Sites, Inventory Gardens and Designed Landscapes and Inventory Historic Battlefields). In our response to the screening of this assessment other designated historic environment assets such as scheduled monuments, listed buildings and conservation areas are not included in this group. However, while these areas will be protected by the appropriate application of the relevant LDP policies there are likely to be alternatives available in those areas containing Group 3 sites. There is also potential for mitigation to be identified for Group 2 sites where an area of search is adjacent to a site or in a defined key view. In light of this it will be beneficial for the commentary and mitigation sections of the assessment too consider these issues.</p>	Comment noted. The mitigation section of the detailed environmental assessment matrix notes that existing LDP policy will act as key mitigation to predicted environmental effects on elements of the historic environment.
HS	<p>9.5 SEA Objectives and Assessment Questions - We welcome the use of SEA objectives for this assessment and confirm that we are content with the objective proposed for the historic environment. The draft assessment questions are appropriate for testing the spatial strategy against the historic environment baseline.</p>	Comment noted.
Scottish Environmental Protection Agency (SEPA)	<p>General - Generally, the scoping report provides sufficient information on the proposed scope and level of detail of the assessment and we are content with the scoping out of the SEA Topics of Air, Water and Climatic Factors. Generally, we are satisfied that the scoping report for the Spatial Framework and Guidance for Wind Energy Development: Supplementary Guidance (SG) provides sufficient information on the proposed scope and level of detail of the assessment.</p>	Comment noted.

SEPA	<p>General - We note that the content of the scoping report is more comprehensive of what was envisaged in your letter 8 August 2014 where you stated: 'Given the existing policy framework set out in the LDP it is unlikely that we will scope any of your areas of interest into the forthcoming Environmental Report for the SG'. We therefore note that Soil, Human Health and Material Assets have been scoped in and Air, Climatic Factors and Water have been scoped out.</p> <p>We are satisfied with this decision and with the reasons provided to support it. Please find further comments below.</p>	Comment noted.
SEPA	<p>General - We are content with the reasons provided for scoping out Water and Air as explained in sections 5 (protection of water environment already set in the Local Development Plan policies) and 6 (it is not considered that the SG has the potential to significantly influence the levels of CO2 or NOx from electricity generation across Scotland- or the Grangemouth AQMA).</p>	Comment noted.
SEPA	<p>General - The reasons provided for scoping out Climatic Factors relate to the significance of the contribution of the Falkirk wind energy generation to meeting the Scottish Government targets, as explained in paragraph 7.5.5: 'Even if the little scope that the SG retains to influence the amount of wind energy development which is acceptable in the Council area enabled Falkirk to meet 100% of its electricity demand from renewable sources, this would only represent less than 2% of CO2 emissions from electricity generation across Scotland, as such it is not considered likely that the SG will have a significant effect on greenhouse gas emissions from energy generation and therefore it is not proposed to scope greenhouse gas emissions from energy generation into the Environmental Report'. We understand the logic behind this and are content with the reasons provided for scoping out Climatic Factors. We are satisfied with this decision also because the role of the SG towards meeting the targets is considered in section 8.5 of Material Assets.</p>	Comment noted.
SEPA	<p>Baseline information - We would advise to make reference to the Zero Waste Plan 2010 and other relevant waste related local Plans Programmes and Strategies (PPS). Please find some general details and guidance in our standing advice for SEA scoping which is available at www.sepa.org.uk/planning.</p>	Comment noted. Reference has been made to the Zero s Plan

		in section 3.2 of the Environmental Report.
SEPA	<p>Baseline information - You may want to consider the following information during the preparation of the SG:</p> <ul style="list-style-type: none"> • Guidance on the Assessment of Peat Volumes, Reuse of Excavated Peat and Minimisation of Waste • Regulatory Position Statement – Developments on Peat. • Good Practice During Windfarm Construction can provide useful information. This is a joint publication by Scottish Renewables, Scottish Natural Heritage, SEPA, the Forestry Commission Scotland and Historic Scotland. • SEPA' webpage on surplus peat management. This includes reference to guidance Developments on Peatland: Site Surveys and Best Practice 	Comment noted. These documents have been referred to in the Environmental Report
SEPA	<p>Air – Paragraph 6.2.3 states: 'Background air quality is monitored across the Council area through monitoring average background concentrations of NOx and PM10 across 1km grid squares'. From our knowledge this is incorrect as background is modelled. Please consult the Falkirk Council's Environmental Health colleagues for further details.</p>	Comment noted.
SEPA	<p>Air - We note the reference in paragraph 6.2.6 to Ineos due to install tail gas treatment on the refinery sulphur recovery units in 2012 and 2013. We would advise to update the reference to the current situation in the Environmental Report.</p>	Comment noted, however, as Air has been scoped out of the Environmental Report the current situation will not be

		reported.
SEPA	<p>Water - In relation to the scoping out of Water we understand that policy RW01 indicates that impacts on the water environment are one of the factors against which applications for wind energy development will be assessed and RW05 indicates that there will be a general presumption against development which would lead to deterioration of any element of the water environment.</p> <p>Although we are content with the scoping out of Water we would like to remind you that ‘the water environment’ means all surface water, groundwater and wetlands (see The Water Environment and Water Services (Scotland) Act 2003, chapter 3). Therefore, although not assessed as part of the SEA, we would recommend that consideration of Ground Water Terrestrial Dependent Ecosystems (GWTDE) is included in the preparation of the SG as the impact on GWTDE can lead to adverse effects and therefore to objections from SEPA at development management stage. Please find further advice on SEPA’s website. Please also note that SEPA is developing further guidance on GWDTE which will be available soon.</p>	Section 12 of the SG deals with the water environment
SEPA	<p>Population and Human Health - We note that the objective in paragraph 3.5 ‘avoid the increased production of waste peat’ is listed under Human Health. We would have usually expected this aspect to be covered under the Material Asset section but we are content to have it covered in this SEA Topic.</p>	We have traditionally included waste under the population and human health topic as waste is generally generated by people and its disposal can affect human health.
SEPA	We would also welcome the inclusion of a question section in relation to the production of other	Comment

	waste or change the above mentioned objective to read ‘ <i>avoid the increased production of waste peat and other waste</i> ’. For example where the windfarm development involves the clearance of trees from forests this can generate waste. SNH Information Note on “Post-construction management of wind farms on clear-felled forestry sites” provides further advice on this topic. In general any re-use of waste proposed (including peat and forest waste) should be of environmental benefit. Please also find additional information in SEPA’s website .	noted.
SEPA	Consultation - We are content with the six weeks consultation period proposed for the Environmental Report.	Comment noted.
Scottish Natural Heritage (SNH)	Consultation Period for Environmental Report - We note that a period of six weeks is proposed for consultation on the Environmental Report and are content with this proposed period.	Comment noted.
SNH	Relationship with other relevant plans and programmes - Renewables remains a relatively rapidly evolving industry and, as a result, our suite of guidance is reviewed on a regular basis. The list of our guidance provided at paragraph 1.1.13 therefore requires update: <ul style="list-style-type: none"> • ‘Designing wind farms in the landscape – consultation draft September 2008’ should be replaced with reference to Siting and Designing Wind Farms in the Landscape (Version 2, May 2014). • ‘Natural heritage assessment of small scale wind energy projects which do not require formal Environmental Impact Assessment (EIA) - Guidance Note’ should be replaced with Assessing the Impact of Small-Scale Wind Energy Proposals on the Natural Heritage (Version 2, June 2014). • Clarify that reference to ‘Cumulative Effect of Wind Farms: Guidance Note’ refers to Assessing the Cumulative Impact of Onshore Wind Energy Developments (March 2012). • ‘Guidelines on the Environmental Impacts of Wind Farms and Small Scale Hydroelectric Schemes: SNH Natural Heritage Management Series (February 2001)’ has been superseded by detailed guidance provided on the Hydro and Onshore Wind Energy. 	References to these documents has been made in the Environmental Report.
SNH	Likely Future Changes without Implementation of the Plan - Paragraphs 2.3.4 to 2.3.7 of the scoping report discuss an identified tension between relevant policies in the Falkirk Local	Comment noted. The

	<p>Development Plan and the approach to spatial frameworks set out in Table 1 of Scottish Planning Policy (SPP). Our understanding of SPP is that the constraints set out in Table 1 should be read in tandem with the detail of considerations for development management in paragraph 169 of SPP. Therefore, while Groups 1 and 2 focus on international and national designations along with communities, decisions for proposals in areas with potential for wind farm development are to be made against paragraph 169, which includes area characteristics, and your own policies.</p> <p>The same would apply to the reasoning set out in paragraphs 2.4.3 and 4.4.2 of the scoping report where you have expressed some doubt on what should take precedence in development management decisions.</p> <p>In summary, our understanding of spatial frameworks and the development management process as set out in Table 1 and paragraph 169 of SPP is that the policy position in SPP does not render your own policies obsolete in decisions on wind energy applications. Policies in your LDP should inform decisions on wind energy applications in Group 3 (areas with potential for wind farm development) of the spatial framework. Paragraph 169 of SPP provides guidance on what considerations are likely to be relevant to this process.</p>	<p>environmental report has assessed a range of ways of clarifying the policy conflict between SPP and policies within the LDP.</p>
SNH	<p>SEA Objectives and Assessment Questions - We agree with the SEA objectives and questions set out in tables 6, 8 and 16 of the scoping report.</p>	<p>Comment noted.</p>