14.2 In terms of safeguarding of local airports, the two main airports are Glasgow and Edinburgh. The Edinburgh and Glasgow Airport safeguarding zones covers a radius of 30km each and includes large parts of the Falkirk area. Cumbernauld Airport also requires to be consulted for certain proposals/locations and constraints have arisen for some proposals in the Falkirk Council area.

14.3 Aviation stakeholders have procedures in place which are designed to assess the potential effect of developments such as wind farms on its activities, and, where necessary, to identify mitigating measures. Their roles are discussed below in the Further Guidance section.

Relevant Policies

14.4 Policy ST21(4) of the Falkirk Council Local Plan refers to aviation constraints

14.5 Policy ST16 applies to Edinburgh Airport Safeguarding Zone. It seeks to resist development proposals which would compromise the safe flight approach to airports . These policies can be found in Appendix 1

Spatial Assessment

14.6 Map 2J shows that the whole of the Council area falls within one or more of the airport consultation zones, and a central swathe falls within both Edinburgh and Glasgow zones. There is also a safeguarding area for Edinburgh Airport between Grangemouth and Bo'ness. Issues have also been emerging with regards to impacts on Cumbernauld airport, particularly around the Slamannan Plateau, although these cannot be mapped/quantified. Each proposal must therefore be assessed on a case-by-case basis. The Edinburgh Airport Safeguarding Zone will be regarded as an area of potential constraint for the purposes of the Spatial Framework. Due to the scale of wind energy development, the scope within this safeguarding zone is likely to be limited. The Edinburgh/Glasgow consultation zones will continue to cover the whole Council area and airport operators will be consulted as part of the planning application process.

Additional Guidance

Civil Aviation Authority

14.7 The Authority's policy on wind turbine development and related guidance to the UK civil aviation community is set out in the policy document CAP 764. The CAA no longer deals with individual pre-planning consultations and has produced a guidance document which sets out what is expected of developers. The link can be found within the bibliography in Appendix 5.

NATS (En-route)

14.8 NATS (En-route) operate under license from the Civil Aviation Authority. NATS (En Route) Plc (NERL) air traffic control services in controlled airspace in the UK. NERL has a comprehensive infrastructure of radars, communication systems and navigational aids throughout the UK, all of which could be compromised by the establishment of wind energy developments. In terms of

establishing the impact on air traffic control services, NATs direct developers to their pre-planning service. The information required to assess impacts includes:

- Development parameters – Turbine numbers, site layout and turbine dimensions.
- Proximity and line of sight to navigational aids, Secondary Surveillance Radar and Voice communication sites.
- Proximity and line of sight to Primary Surveillance Radar.
- Further details of NATs pre-planning assessment available in their website. (Link in Appendix 5)

Ministry of Defence

14.9 Most of the Falkirk Council is not currently identified as being an area of low-flying activity. However, the MOD require to be consulted as part of the planning process where the proposal is 11 metres to blade tip or taller, or has a rotor diameter of 2 metres or more.

Pre-Application Discussions

14.10 Developers are asked at pre-application/scoping stage, to contact the relevant consultees and airport operators to establish any potential impacts and agree suitable mitigation of impacts.

14.11 A comprehensive suite of aviation safeguarding data including GIS data is available on the DECC website which may be useful when assessing multiple proposals and/or alternative locations.

14.12 In terms of addressing radar issues, BAA have recently developed a technique to blank single turbines from Primary Surveillance Radar, which may be applicable in some cases. This would be subject to a specific technical evaluation. Applicants should contact BAA for further information on criteria and fees.

Use of Suspensive Conditions

14.13 As part of the statutory planning application process, some aviation objections can be dealt with by the use of suspensive conditions, as negotiation between NATs and the developers can sometimes be resolved within the specific timeframe for consent. Suspensive conditions will only be used where it can be demonstrated that issues can be resolved within a specific timeframe.

15. TELECOMMUNICATIONS

Background

15.1 Wind turbines produce electro-magnetic radiation which can interfere with broadcast communications and signals. Potential problems as a result of turbines can arise from signal blocking or signal reflection between transmitters and receivers.

Relevant Policy

15.2 Policy ST21(4) advises that wind energy developments will be assessed in relation to impacts on telecommunications. Policy ST21 can be found in Appendix 1

Spatial Assessment

15.3 Fixed telecommunications link transmitters in the Falkirk Council area include:

- Doups
- Myot Hill
- Banknock
- Falkirk
- Grangemouth (multiple points)
- Bo'ness

15.4 Outside the Falkirk area are transmitters which could be affected include:

- Black Hill
- Kirk O' Shotts
- Cairnpapple
- Earls Hill
- Knock Hill

15.5 It is not appropriate to spatially identify any specific areas of constraint within the Spatial Framework. Issues can normally be resolved between the developer and the relevant operators, and new technology and mitigation methods are constantly emerging.

Additional Guidance

15.6 Under the Wireless Telegraphy Act 2006, Ofcom is also responsible for protecting the spectrum from interference or abuse, which may be either deliberately or unintentionally caused. Ofcom will advise of the operators that prospective developers should contact.

15.7 Ofcom have produced a guidance note '*Tall Structures and their impact on broadcast and other wireless services*' which can be found on their website.

15.8 Developers should liaise with any authorities or bodies likely to have an interest as part of the planning process, in particular, the local emergency services.

16. COMMUNITY IMPACTS

Background

16.1 There are impacts on settlements and communities which can arise from all wind energy developments to varying degrees in terms of noise and shadow flicker. There are also potential constraints such as disruption and dispersion of industrial plumes in industrial locations such as Grangemouth which are emerging issues, with very little background data and information available at present.

16.2 There are two main types of noise associated with wind turbines: mechanical noise produced by the gearbox and generator, and aerodynamic noise produced by turbine blades. Recent advances in turbine technology have sought to reduce the noise from turbines through the development in gearless drive wind turbines. Noise is dependant on a number of factors including type of turbine used, local topography and land cover, and prevailing climatic conditions.

16.3 If there is the likelihood of shadow flicker been generated it is possible to calculate the number of hours per year that shadow flicker may occur at a building for the relative position of the turbine to the building, the geometry of the wind turbine, the latitude of the wind turbine site and the width of the windows potentially affected.

Relevant Policy

16.4 Falkirk Council Local Plan Policy ST21(5) states that wind energy proposals will be assessed in relation to impacts on settlements by virtue of noise and shadow flicker.

Spatial Assessment

16.5 Scottish Planning Policy advises that there should be a separation distance of **up to** 2km between areas of search for wind energy developments of over 20MW and the edge of cities, towns and villages, but that decisions on individual developments should take into account specific local circumstances and geography. A 2km buffer from Urban/Village limits in the Falkirk Council area would in fact include most of the Council area. Proposals will therefore be assessed on an individual basis.

16.6 In terms of the implications of single/small clusters of turbines, it is industry best practice to ensure that a minimum separation distance of **at least** 500m from a dwelling house, work place or community facility to a turbine is achieved, although the exact separation distance required will be partly dependent on prevailing climatic conditions, topography and tree cover. For all proposals, the developer will be required to demonstrate that impacts, in particular noise, are acceptable.

16.7 Safety issues, such as structural damage, ice throw and driver distraction must be considered when siting a wind turbine in close proximity to roads, public paths and railway lines. The distances between turbines and the following receptors are as follows:

- An existing road (non-trunk road) or path: at least the height (to blade tip) of the proposed turbine(s).
- Trunk Roads: at least the height (to blade tip) of the proposed turbine(s) plus 10% for micro/small-scale. Height to blade tip plus 50m for commercial turbines. (See 'Highways Agency: Spatial Planning Advice Note For Siting Wind Turbines Near To Trunk Roads')
- High-voltage overhead power lines: a minimum separation distance of topple height plus 10%.

Additional Guidance

Noise

16.8 ETSU R-97 provides the benchmark against which noise is assessed. Noise should be limited to 5dB(A) above background noise levels. In terms of larger schemes requiring Environmental Impact Assessment, noise is addressed as part of the Environmental Statement. It is widely recognised that the ETSU R-97 assessment method is outdated. It is anticipated that the Scottish Government will review this.

16.9 Scottish Government online guidance sets out further guidance and advises that noise assessment should be site-specific and local variables on wind speed, topography and vegetation can significantly affect noise levels.

Shadow Flicker

16.10 In terms of addressing shadow flickers, as a general rule a minimum separation distance of 10 times the turbine's rotor blade diameter from a dwelling house, work place or community facility to the turbine will be required. Exceptionally if turbines are to be located closer than this, the developer will be required to demonstrate that the impacts are acceptable.

16.11 The Department of Energy and Climate Change report 'Update of UK Shadow Flicker Evidence Base (March 2011) provides useful updated information and case studies on shadow flicker and possible mitigation. (See bibliography)

Air Quality Management Area

16.12 An Air Quality Management Area (AQMA) (See MAP 3) was designated in November 2005 for a breach of the 15-minute sulphur dioxide objective in the Grangemouth area. SEPA have advised that issues may arise from turbines, particularly single turbines which could potentially disrupt the industrial plumes from activities within Grangemouth and result in nearby residential areas experiencing pollutants which they were not previously exposed to. Factors which can affect the plume are:

- Plume thermodynamics (buoyancy of emissions)
- Atmospheric conditions, prevailing winds and weather
- Local topography and surrounding structures

16.13 It is recommended for proposals within and close to the AQMA that developers raise the issue as part of pre-application discussions with SEPA. The effects of

wind turbines on industrial plumes are relatively an emerging constraint, but it is anticipated that SEPA will be producing further guidance on the issue.

17. ANCILLARY WORKS

17.1 Ancillary development relating to windfarms can cause direct ecological and visual impacts. Detailed consideration of all the ancillary elements of a scheme will be taken into account in the application process. These are as follows:

Access Tracks and Transportation

17.2 Where wind energy developments will involve abnormal load impact on public roads, developers and their contractors will be required, in consultation with the Council and Trunk Roads Authority, to produce an appropriate Traffic Management Plan. Impacts and mitigation could be dealt with by a Section 75 or other legal agreement

Borrow Pits

17.3 Detailed design of any proposed borrow pits should be submitted with any application. This should include; details of water management, including ground water implications and details of reinstatement. As best practice, SEPA recommend a buffer distance of 100m between ground water dependent terrestrial ecosystems (particular type of wetland) and roads, tracks and trenches, and a larger separation distance of 250m from borrow pits and foundations. These separation distances will ensure that these ecosystems are adequately protected and prevent habitat loss.

Control Buildings, Substations and External Works

17.4 Any proposed buildings and external works should be carefully sited to reduce their visual impact detailed plans should be submitted as part of pre-application discussions.

Grid Connection

17.5 Cable routes should be carefully chosen to avoid ecologically or visually sensitive areas. Where power lines cannot be undergrounded careful consideration should be given to the visual impacts of any pylons and the suitability of any route. Applicants should demonstrate likely grid connection in their supporting information. Information regarding the proposed method of connecting to the grid should be provided.

Construction Compounds

17.6 Any application should address the requirement for careful siting and design, minimise ground workings, propose appropriate drainage and suitable pollution prevention guidelines**.**

18. DECOMMISSIONING

18.1 The average lifespan of a wind turbine is around 25 years. The planning consent generally reflects this. Developers should provide a full description of the arrangements for decommissioning as part of the Environmental Statement, or supporting information for non-EIA developments. It may be appropriate for turbine bases tend to be left 'in situ' to avoid damage to established ecological habitats and the landscape. Falkirk Council will ensure via conditions and/or legal agreement that site restoration takes place either on the expiry of the consent or in the event of the project ceasing to operate for a specified period. It may be appropriate in specific circumstances to require a decommissioning bond but this will be assessed on a case-by-case basis.

19. OVERVIEW OF KEY AREAS OF CONSTRAINT

19.1 The nature of the Falkirk Council area is such that there are virtually no areas which can be identified spatially as being relatively free from all constraints, and each proposal for wind energy should seek to address each constraint identified within this SPG and by statutory consultees.

19.2 Part 1: Spatial Framework identifies one broad area of search (as defined by SPP) within the south of the Falkirk Council area which may be suitable for wind energy development of over 20MW. A planning application has been approved in this location.

19.3 For other typologies, proposals will be assessed against this SPG and relevant development policies.

19.4 The following table take the conclusions of the LCS, by Landscape Character Unit, and highlights other constraints which may be relevant to the proposal. It is likely that the overlapping constraints will bring the scope and capacity down considerably within each LCA.

	Potential Landscape/ Visual Capacity	Key Issues
LANDSCAPE		
1(i) Kilsyth / Denny Hills	Low-Moderate	• Turbines of over 50m unlikely to be supported • Most of this LCU lies within an AGLV so proposals will be required to undertake more detailed assessment of effects on the AGLV • LCA contains visual cone from 'important' viewpoint at Falkirk Wheel • Potential impact on Kilsyth Hills/Campsie Fells and Touch Hills
		ECOLOGY

	Potential Landscape/ Visual Capacity	Key Issues
		• SSSI at Denny Muir which is likely to be highly sensitive to wind energy given that its qualifying interests include blanket bog and fen.
		SOILS
		• Peaty and other rare soils across the rest of the LCU.
		LANDSCAPE
2(i) Denny Hills Fringe	Low-Moderate	• Turbines of over 50m unlikely to be supported. • Most of this LCU lies within an AGLV so proposals will be required to undertake more detailed assessment of effects on the AGLV. • LCA containts visual cone from 'important' viewpoint at Falkirk Wheel WED may be appropriate Potential impact on Touch Hills, Firth of Forth and Ochil's not affected. • Smaller proposals under 50m may be appropriate where it relates to the open, gently rolling landform.
		SOILS
		• Peaty and other rare soils across the rest of the LCU.
2(ii) Touch Hills Fringe	Low-Moderate	**LANDSCAPE**
		• Turbines of over 50m unlikely to be supported • The area of this LCU west of the M80 motorway is within an Area of Great Landscape Value. • LCA contains visual cone from 'important' viewpoint at Falkirk Wheel.
		ECOLOGY
		• There are a number of locally designated nature conservation sites which may restrict development. (See Map 2A)
		LANDSCAPE
3(i) Slamannan Plateau	Moderate - High	• LCA contains visual cones from 'important' viewpoints at Cairnpapple & Blawhorn Moss. • The LCS considers that there is moderate-high capacity for suitably designed wind turbine groups which generally fit within the landscape.
		ECOLOGY
		• The northern section of this area falls within the Bean Goose fields and are an Area of Significant Protection for the Spatial Framework (Part 1). Scope for single turbines is likely to be extremely limited within these fields. Outwith the Bean Goose Fields proposals may require Appropriate Assessment.
		SOILS
		• Area covered extensively by peat/carbon-rich soils.
		LANDSCAPE
3(ii) Darnrig / Gardrum Plateau Moorland	Moderate-High	• Impacts on the AGLV will require to be fully assessed • Cumulative effects with Greendykeside wind turbines. • Some potential for landscape change may be appropriate within large scale, open, featureless

	Potential Landscape/ Visual Capacity	Key Issues
		plateau.
		ECOLOGY
		• A Large section of this area falls within the Bean Goose fields and are an Area of Significant Protection for the Spatial Framework (Part 1). Scope for single turbines is likely to be extremely limited within these fields. Outwith the Bean Goose Fields proposals are likely to require appropriate assessment to determine impacts on the Slamannan Plateau SPA. • Darnrigg Moss is a SSSI and an important area of raised bog.
		SOILS
		• Area covered extensively by peat/carbon-rich soils.
		LANDSCAPE
3(iii) Castlecary / Shieldhill Plateau Farmland	Low-Moderate	• Turbines of over 50m are unlikely to be supported. • Potential impacts on views or setting of the Antonine Wall. • Views from sensitive routes and urban edge.
		BUILT AND CULTURAL HERITAGE
		• The Antonine Wall WHS and buffer zones are also a key constraint.
		ECOLOGY
		• The southern part of this LCU also contains part of the Slamannan Plateau SPA as well as Bean Geese Fields which are important supporting habitat this will restrict development.
		• The western part of the LCU also contains a large area of peaty/rare soils
		• Howierigg Muir SSSI is an area of valuable peatland and wetland habitat.
		LANDSCAPE
4(i) Avon Valley	Low-Moderate	• Turbines of over 50m are unlikely to be supported. • Highly sensitive in landscape/visual terms • Significant cross-border sensitivity • A large part of this LCU is within an Area of Great Landscape Value • LCA contains visual cones from 'important' viewpoints at Cockleroy, Cairnpapple& Avon Aqueduct.
4(ii) Carron Glen	Low	• Majority of this area falls within an AGLV. • High level of landscape and visual sensitivity and most typologies would not be supported. • Cumulative effects with Craigengelt and Earlsburn wind farms . • Most development likely to be inappropriate since key landscape characteristics affected.
		ECOLOGY

	Potential Landscape/ Visual Capacity	Key Issues
		• Parts of the River Carron are an SSSI and part of this SSSI supports sensitive grassland habitat.
		LANDSCAPE
4(iii) Bonny Water	Moderate	• Potential for impact on views or setting of the Antonine Wall. • The larger wind turbine typology heights above 50m are unlikely to be acceptable.
		BUILT AND CULTURAL HERITAGE
		• Most of the LCU falls within the Antonine Wall buffer zone, which is an area of significant protection in the Spatial Framework, and the buffer zone is highly sensitive to all typologies of wind energy development.
		IMPACT ON SETTLEMENTS
		• The proximity to the urban area means that amenity issues will preclude most wind energy development.
		LANDSCAPE
4(iv) Lower Carron / Bonny Water	Moderate	• Potential for impact on views or setting of the Antonine Wall. • LCU contains visual cone from 'important' viewpoint at Falkirk Wheel. • Visual impact on settlements and the transport network will be a key consideration.
		• The LCS considers that there is some capacity for wind energy development in this LCU for turbines of under 50m.
		LANDSCAPE
4(v) Falkirk – Grangemouth Urban Fringe	Moderate	• Typology heights above 20m are unlikely to be acceptable. • WED inappropriate where views or setting of the Antonine Wall affected.
		• WED may be appropriate where it relates to urban fringe character.
		GREEN BELT
		• The majority of this LCU lies within the Green Belt, and development must accord with Policy EQ20 and must not compromise the function of the Green Belt.
		BUILT AND CULTURAL HERITAGE
		• This LCU is constrained by the Antonine Wall and Buffer Zone
5(i) Manuel Farmlands	Low-Moderate	• Turbines of over 50m are unlikely to be supported • Potential impact on views or setting of the Antonine Wall. • LCA contains visual cone from 'important' viewpoint at Cockleroy.
		•
		BUILT AND CULTURAL HERITAGE
		• This LCU is relatively constrained by the Antonine Wall and Buffer Zone
		ECOLOGY

	Potential Landscape/ Visual Capacity	Key Issues
		• Impacts on the Firth of Forth SPA are also a key constraint, and flights lines and supporting habitat may be affected. As such this complex range of issues increases the likelihood of proposals requiring an Appropriate Assessment and/or EIA.
		AVIATION
		• A large part of this LCU falls within the Edinburgh Airport Safeguarding Zone which may further restrict the height and scale of development.
		LANDSCAPE
6(i) Bo'ness Coastal Hills	Low-Moderate	• The LCS considers that there is relatively little capacity for wind energy development in this LCU and turbines of over 50m are unlikely to be supported. • Development inappropriate within visual cone from 'iconic' viewpoint at Blackness Castle. • LCA contains visual cones from 'important' viewpoints at House of Binns Tower, Avon Aquaduct & Cockleroy. • Cumulative effects with Muirhouse wind turbines. • Cross-border sensitivity a key consideration
6(ii) Grangemouth / Kinneil Flats	Moderate-High	• The LCS advises that large turbines taller than 100m would be acceptable and could relate visually to the vertical nature of the industrial development nearby whereas smaller and single turbines could appear trivial and out of scale in the context of the nearby industry.
		ECOLOGY
		• A key issue will be impacts on the Firth of Forth SPA/SSSI. An Appropriate Assessment would be a likely requirement.
		IMPACT ON SETTLEMENTS
		• Visual and amenity impacts on the western fringe of Bo'ness would also be an issue for larger-scale turbines.
		BUILT AND CULTURAL HERITAGE
		• Whilst not in the Antonine Wall Buffer Zone, an assessment would require to bemade of impacts on the setting of key sections of the wall which lie in close proximity.
		LANDSCAPE
6(iii) Skinflats	Moderate	• The larger wind turbine typology heights above 50m are unlikely to be acceptable. • LCA contains visual cone from 'important' viewpoint at Airth Castle. • Potential impacts on backdrop of the Ochils.
		ECOLOGY
		• Impacts on the Firth of Forth SPA will be a key consideration. Supporting habitat is located across

	Potential Landscape/ Visual Capacity	Key Issues
		most of this LCU and bird flight paths will be a consideration. **IMPACT ON SETTLEMENTS**
		• Visual and amenity impacts would restrict development close to the north/western fringe of Grangemouth, Larbert/Stenhousemuir and Skinflats.
		•
		LANDSCAPE
6(iv) Carse of Forth	Moderate	• The LCS considers that there is some capacity for wind energy development in this LCU for turbines of under 50m. • The Carse is highly sensitive visually with extensive views of the Forth and to the Ochil Hills. • LCA contains visual cones from 'important' viewpoints at Falkirk Wheel & Airth Castle.
		BUILT AND CULTURAL HERITAGE
		• There are visual sensitivities arising from the viewcone of Airth Castle, and the designed landscape and listed building at Dunmore.
		• The village of Dunmore is also a Conservation Area and impacts arising from cross-border developments in the planning process may result in adverse cumulative impacts.
		ECOLOGY
		• Impacts on the Firth of Forth SPA will be a key consideration and loss of supporting habitat and bird flight paths will be a constraint. An Appropriate Assessment would be a likely requirement.

APPENDIX 1: LIST OF DEVELOPMENT PLAN POLICIES RELEVANT TO WIND ENERGY DEVELOPMENT

GENERAL RENEWABLE ENERGY POLICIES

Falkirk Council Structure Plan

Policy ENV.13

Proposals for the generation of energy from renewable sources will generally be supported subject to an assessment of individual proposals in relation to Structure Plan Policies ENV.1-ENV.7. The Council will work in partnership with other agencies to set out, in the local plan, the criteria for the location and design of renewable energy developments.

Falkirk Council Local Plan

Policy ST20

The Council will support development required for the generation of energy from renewable sources, and the utilisation of renewable energy sources as part of new development, subject to assessment of proposals against other Local Plan policies. Renewable energy development will be viewed as an appropriate use in the countryside where there is an operational requirement for a countryside location.

Policy ST21

Wind energy developments will be assessed in relation to the following factors:

(1) The visual impact of the development, having regard to the scale and number of turbines, existing landscape character, and views from settlements, main transport corridors and other key vantage points. Development will not necessarily be excluded from Green Belts or Areas of Great Landscape Value, but must demonstrate particular sensitivity in terms of scale and design where these designated areas are affected;
(2) The ecological impact of the development, having regard to Policies EQ24 and EQ25, including impacts on both designated sites and protected species. In particular, developers will be required to demonstrate that there will be no adverse impact on migratory birds;
(3) The impact on the cultural heritage and the landscape setting of cultural features, having regard to Policies EQ12, EQ14, EQ16, EQ17 and EQ 18;
(4) The impact on aviation and telecommunications, with particular regard to the safeguarding zones and operational needs associated with Edinburgh, Glasgow and Cumbernauld airports;
(5) The impact on settlements and residential properties by virtue of noise and 'shadow flicker'; and
(6) Cumulative impacts in relation to the above factors, where there are existing developments in the area, or the development is one of a number of proposals for an area.

NATURAL HERITAGE

Falkirk Council Structure Plan

ENV 3 NATURE CONSERVATION SITES

The protection and promotion of nature conservation interests will be an important consideration in assessing all development proposals. Accordingly:

1 Any development likely to have a significant effect on a designated or potential European Site under the Habitats or Birds Directives (Special Areas of Conservation and Special Protection Areas) or on a Ramsar or Site of Special Scientific Interest (see Schedule Env.3), must be subject to an appropriate assessment of the implications for the sites conservation objectives. The development will only be permitted where the appropriate assessment demonstrates that:
a) it will not adversely affect the integrity of the site, or

b) there are no alternative solutions and there are imperative reasons of overriding national public interest.

2 Sites of local or regional importance, including Wildlife Sites and Sites of Importance for Nature Conservation, will be defined in Local Plans. The designation of Sites will be based on Scottish Wildlife Trust criteria. Development likely to have an adverse impact on any such site or feature will not be granted planning permission unless it can be clearly demonstrated that there are reasons which outweigh the need to safeguard the site or feature. Until such areas are defined in Local Plans, identified or potential sites will be afforded the same protection.

3 *Local Plans will identify opportunities for enhancing the natural heritage including new habitat creation, the identification of 'wildlife corridors' and measures to ensure the protection of priority local habitats and species as identified in the Falkirk Local Biodiversity Action Plan.*

4 *The aims and objectives of the Falkirk Local Biodiversity Action Plan and any associated Species Action Plans and Habitat Action Plans will be a material consideration in assessing any development proposal likely to impact on local priority species and habitats.*

Falkirk Council Local Plan

EQ21 FALKIRK GREENSPACE

Through the Falkirk Greenspace Initiative, the Council will work with its partners to improve the landscape, habitat quality and recreational potential of the network of urban fringe and urban open space around and within settlements. Priority will be given to:

(1) Appropriate woodland creation and management, where landscape quality, access, biodiversity, and connectivity across the Greenspace can be promoted;

(2) The creation of an interlinked network of paths within the Greenspace, with particular emphasis on a principal circular route, as a key part of the core path network, complemented by secondary routes where appropriate; and

(3) Requiring developers in urban fringe locations to contribute to landscape and/or access improvements

EQ22 LANDSCAPE AND VISUAL ASSESSMENT

Development proposals which are likely to have a significant landscape impact must be accompanied by a comprehensive landscape and visual assessment as part of the Design Statement, which demonstrates that the setting is capable of absorbing the development, in conjunction with suitable landscape mitigation measures, and that best environmental fit has been achieved,

EQ24 ECOLOGICAL SITES AND FEATURES

Development likely to have a significant effect on Natura 2000 sites (including Special Protection Areas, Special Areas of Conservation, and Ramsar Sites) will be subject to an appropriate assessment. Where an assessment is unable to conclude that a development will not adversely affect the integrity of the site, development will only be permitted where there are no alternative solutions; and there are imperative reasons of overriding public interest, including those of a social or economic nature. These can be of a social or economic nature except where the site has been designated for a European priority habitat or species. Consent can only be issued in such cases where the reasons for overriding public interest relate to human health, public safety, beneficial consequences of primary importance for the environment or other reasons subject to the opinion of the European Commission (via Scottish Ministers).

1 *Development affecting Sites of Special Scientific interest will not be permitted unless it can be demonstrated that the overall objectives of the designation and the overall integrity of the designated area would not be compromised, or any adverse effects are clearly outweighed by social or economic benefits of national importance.*

2 *Development affecting Wildlife Sites, Sites of Importance for Nature Conservation, Local Nature Reserves, wildlife corridors and other nature conservation sites of regional or local importance will not be permitted unless it can be demonstrated that the overall integrity of the site will not be compromised, or any adverse effects are clearly outweighed by social or economic benefits of substantial local importance.*

3 *Development likely to have an adverse affect on species which are protected under the Wildlife and Countryside Act 1981, as amended, the Habitats and Birds Directives, or the Protection of Badgers Act 1992, will not be permitted.*

4 *Where development is to be approved which could adversely affect any site of significant nature conservation value, the Council will require mitigating measures to conserve and secure future management of the site's natural heritage interest. Where habitat loss is unavoidable, the creation of replacement habitat to compensate for any losses will be required.*

5 *The Council, in partnership with landowners and other relevant interests, will seek the preparation and implementation of management plans for sites of nature conservation interest.*

EQ25 BIODIVERSITY

The Council will promote the biodiversity of the Council area and ensure that the aims and objectives of the Falkirk Area Biodiversity Action Plan are promoted through the planning process. Accordingly:

1 *Developments which would have an adverse effect on the national and local priority habitats and species identified in the Falkirk Area Biodiversity Action Plan will not be permitted unless it can be demonstrated that there are overriding national or local circumstances;*

2 *The safeguarding, enhancement and extension of the broad and key habitats and the species of conservation concern identified in 'The Biodiversity of Falkirk' will be given particular attention in the consideration of development proposals;*

3 *Development proposals should incorporate measures to promote, enhance and add to biodiversity, through overall site planning, and infrastructure, landscape and building design, having reference to the Supplementary Planning Guidance Note on 'Biodiversity and Development'; and*

4 *Priority will be given to securing appropriate access to and interpretation of areas of local nature conservation interest. The designation of Local Nature Reserves, in consultation with communities, local wildlife groups and statutory bodies will be pursued.*

EQ26 TREES, WOODLAND AND HEDGEROWS

The Council recognises the ecological, landscape, economic and recreational importance of trees, woodland and hedgerows. Accordingly:

(1) Felling detrimental to landscape, amenity, nature conservation or recreational interests will be discouraged. In particular ancient, long established and semi-natural woodlands will be protected as a habitat resource of irreplaceable value;

(2) In an area covered by a Tree Preservation Order (TPO) or a Conservation Area, development will not be permitted unless it can be proven that the proposal will not adversely affect the longevity, stability or appearance of the trees. Where necessary, endangered trees and woodlands will be protected through the designation of further TPOs;

(3) Where development is permitted which will involve the loss of trees or hedgerows of amenity value, the Council will normally require replacement planting appropriate in terms of number, size, species and position;

(4) The enhancement and management of existing woodland and hedgerows will be encouraged. Where the retention of a woodland area is integral to a development proposal,

developers will normally be required to prepare a plan and make provision for its future management; and
(5) There will be a preference for the use of appropriate local native species in new and replacement planting schemes, or non-native species which are integral to the historic landscape character.

EQ23 AREAS OF GREAT LANDSCAPE VALUE
The Council will protect Areas of Great Landscape Value from development which would be detrimental to its amenity and distinctive landscape quality. In addition to satisfying other relevant countryside policies, proposals within these areas will only be permitted where accompanied by a landscape and visual assessment demonstrating that the development can be accommodated without adverse impact on the landscape quality.

GREEN BELT

Falkirk Council Structure Plan

ENV.2 GREEN BELT
There will be a system of Green Belts in the areas generally described in Schedule ENV.1 and indicated on the Key Diagram. Within these there will be a long term presumption against development in order to prevent the coalescence of settlements, protect their landscape setting and avoid prejudicing future proposals for landscape enhancement and countryside recreation. The detailed boundaries will be defined in Local Plans, having regard, where appropriate, to the Strategic Development Opportunities set out in Policy Econ.1 and Schedule Econ.1 and other structure plan policies.

Falkirk Council Local Plan

EQ20 GREEN BELT
There will be a strong presumption against development in the Green Belt except where it can be demonstrated that:

1) The proposal satisfies Policy EQ19 and any relevant countryside policies as set out in Table 3.3; and
2) The proposal will not undermine the role of the Green Belt by
- *detracting from its existing landscape character;*
- *reducing the visual separation between settlements; or*
- *compromising its existing or potential future use for countryside recreation.*

3) Where proposals satisfy these criteria, developer contributions to landscape improvement, access and countryside recreation will be sought in accordance with Policy EQ21.

THE WATER ENVIRONMENT

Falkirk Council Structure Plan

ENV.4 COASTAL PLANNING AND FLOODING
The Council will apply the following general principles with regard to coastal planning and flooding issues:
1 There will be a general presumption against development in the undeveloped coastal zone (as indicated generally on the key diagram), unless it is clearly demonstrated that a coastal location is essential for that development;

2 In assessing proposals for development within the coastal zone or coastal defence measures on the developed coast, particular attention will be paid to the likely implications in terms of flooding, existing and future coastal defence works, nature conservation, landscape impact, water pollution and the need to work in partnership with other agencies to promote the integrated management of the estuary and its resources.;

3 The Coastal zone north of the River Carron will be a priority area for evaluating the feasibility for managed retreat and other coastal zone management measures.; and

4 In areas where there is a significant risk of flooding, there will be a presumption against new development which would be likely to be at risk or would increase the level of risk for existing development. Where necessary
the Council will require applicants to submit supplementary information to assist in the determination of planning applications.

POLICY ENV.15 WATER QUALITY
The Council will contribute to the improvement of water quality in local rivers and lochs. Specifically, subject to appropriate maintenance agreements, the adoption of "Sustainable Urban Drainage Manual" as advocated by the Scottish Environment Protection Agency will be supported in all major new developments.

Falkirk Council Local Plan

EQ 27 WATERCOURSES
The Council recognises the importance of watercourses within the Council area in terms of their landscape, ecological, recreational and land drainage functions. Accordingly:
(1) There will be a general presumption against development which would have a detrimental effect on the landscape integrity, water quality, aquatic and riparian ecosystems, or recreational amenity of watercourses. Development proposals adjacent to a watercourse should provide for a substantial undeveloped and suitably landscaped riparian corridor to avoid such impacts;
(2) Watercourses will be promoted as recreational corridors, with existing riparian access safeguarded and additional opportunities for ecological enhancement, access and recreation encouraged where compatible with nature conservation objectives; and
(3) There will be a general presumption against the culverting of watercourses.

ST12 FLOODING
In areas where there is significant risk of flooding, there will be a presumption against new development which would be likely to be at risk, would increase the level of risk for existing development or would be likely to require high
levels of public expenditure on flood protection works. Applicants will be required to provide information demonstrating that any flood risks can be adequately managed both within and outwith the site.

BUILT AND CULTURAL HERITAGE

Falkirk Council Structure Plan

POLICY ENV.5 ENVIRONMENT AND HERITAGE
Important Archaeological Sites, Scheduled Ancient Monuments, Listed Buildings, Conservation Areas, sites included in the Inventory of Historic Gardens and Designed Landscapes and trees will be protected and enhanced. Local Plans will identify these assets and incorporate policies appropriate to the significance of the area or individual feature, including the following range of measures:
1 Measures to ensure that assets are maintained in a good state of repair;

2 Promotion of appropriate new uses for buildings;
3 Promoting sensitive interpretation of heritage assets;
4 Protection of the assets and their setting from inappropriate development;
5 Where development would damage, or result Nin the loss of the asset, that provision is made for adequate recording of the current status of the asset; and
6 Reviewing the boundaries of areas to ensure their continuing relevance.

Falkirk Council Local Plan

EQ12 CONSERVATION AREAS

The Council will protect the historic character and visual amenity of each Conservation Area. Accordingly:
(1) The Council will prepare Character Appraisals of individual Conservation Areas and, on the basis of these, will review existing boundaries and Article 4 Directions, prepare detailed design guidance as appropriate, and draw up enhancement schemes as resources permit;
(2) New development in Conservation Areas, or affecting their setting, including extensions and alterations to existing buildings, will only be permitted where it preserves or enhances the character of the area, with particular reference to the historic pattern and density of development; its setting; the architectural style, massing and materials of buildings; landscape treatments; and boundary features;
(3) Demolition of buildings within Conservation Areas will not be permitted unless they make no material contribution to the character and appearance of the area. Where demolition is proposed, the considerations set out in the relevant Historic Scotland guidance note should be adhered to; and
(4) Replacement windows, doors, roofs, rainwater goods, boundary treatments and other features on unlisted buildings in Conservation Areas should preserve or enhance the character of the Conservation Area in terms of appearance, detailing and materials.

EQ14 LISTED BUILDINGS

The Council will seek to preserve the character and appearance of listed buildings. Accordingly:
(1) Development affecting a listed building, or its setting, shall preserve the building or its setting, or any features of special architectural or historic interest which it possesses. The layout, design, materials, scale, siting and use of any development shall be appropriate to the character and appearance of the listed building and its setting.
(2) Proposals for the total or substantial demolition of a listed building will only be supported where it is demonstrated beyond reasonable doubt that every effort has been exerted by all concerned to find practical ways of keeping it. This will be demonstrated by inclusion of evidence to the Council that the building:
• has been actively marketed at a reasonable price and for a period reflecting its location, condition and possible viable uses without finding a purchaser; and
• is incapable of physical repair and re-use through the submission and verification of a thorough structural condition report; and
(3) RCAHMS shall be formally notified of all proposals to demolish listed buildings to enable features to be recorded.

EQ16 SITES OF ARCHAEOLOGICAL INTEREST

(1) Scheduled ancient monuments and other identified nationally important archaeological resources shall be preserved in situ, and within an appropriate setting. Developments which have an adverse effect on scheduled monuments or the integrity of their setting shall not be permitted unless there are exceptional circumstances;
(2) All other archaeological resources shall be preserved in situ wherever feasible. The Council will weigh the significance of any impacts on archaeological resources and their settings

against other merits of the development proposals in the determination of planning applications; and
(3) Developers may be requested to supply a report of an archaeological evaluation prior to determination of the planning application. Where the case for preservation does not prevail, the developer shall be required to make appropriate and satisfactory provision for archaeological excavation, recording, analysis and publication, in advance of development

EQ17 ANTONINE WALL
The Council will seek to retain, protect, preserve and enhance the Antonine Wall, its associated archaeology, character and setting. Accordingly:
(1) There will be a presumption against development which would have an adverse impact on the 'Frontiers of the Roman Empire (Antonine Wall) World Heritage Site' as defined on the Proposals Map;
(2) There will be a presumption against development within the the 'Frontiers of the Roman Empire (Antonine Wall) World Heritage Site' buffer zones, as defined on the Proposals Map, which would have an adverse impact on the Site and its setting, unless mitigating action to the satisfaction of the Council in consultation with Historic Scotland can be taken to redress the adverse impact, and there is no conflict with other Local Plan policies; and
(3) The Council, in association with partner Councils and Historic Scotland, will prepare Supplementary Planning Guidance on the criteria which will be applied in determining planning applications for development along the line, or within the setting, of the Antonine Wall.

EQ18 HISTORIC GARDENS AND DESIGNED LANDSCAPES
There will be a general presumption against development which would adversely affect the character or setting of sites identified in the 'Inventory of Gardens and Designed Landscapes in Scotland' and other historic gardens and landscapes of national, regional or local significance. The Council will seek to encourage sensitive management of historic gardens and designed landscapes.

OUTDOOR ACCESS

Falkirk Council Structure Plan

POLICY TRANS.1 CORE PATH NETWORKS
The Council through consultation will identify a network of strategic paths and core path networks based on the main communities of the area. In particular the Council will make provision for the identification, safeguarding and development of the following:

1. National Cycle Network route between Edinburgh and Stirling through the Falkirk Council area;
2. Strategic walking and cycling routes utilising the Union and Forth and Clyde Canal towpaths; and
3. Local Core Path networks in line with the Council's Outdoor Access Strategy.

The Council in its Local Plans will contain policies that protect identified paths from development and ensure that wherever possible new development proposals create linkages and strategic routes to the identified core path network.

Falkirk Council Local Plan

ST1 CORE PATH NETWORK
The Council will safeguard and promote the development of the core path network. Where appropriate, developer contributions to the implementation of the network will be sought.

AVIATION

Falkirk Council Local Plan

ST16 AIRPORT SAFEGUARDING AREAS
In accordance with the Town and Country Planning (Safeguarded Aerodromes, Technical Sites and Military Explosives Areas)(Scotland) Direction 2003, the Council will refer planning applications to the relevant airport operator subject to the provisions of the official safeguarding map. In the interests of air travel safety, development proposals which compromise the safe flight approach to airports could be subject to restrictions.

APPENDIX 2: OVERVIEW OF ENVIRONMENTAL IMPACT ASSESSMENT AND PROCEDURAL ISSUES

Who determines applications for wind energy?

1. The Scottish Government deals renewable energy development in excess of 50 MW. Falkirk Council would be consulted on proposals submitted to the Scottish Government and may or may not choose to object and/or provide observations and comments.

Environmental Impact Assessment (EIA)

2. PAN 58 describes EIA as the process of identifying positive and negative environmental effects of development and identifying potential mitigation. Most wind energy proposals general fall within Schedule 2, which is based upon whether a proposal exceeds defined thresholds. Proposals fall within Schedule 2 if they comprise of more than 2 turbines or if the height exceeds 15 metres. The proposal is then assessed according to the criteria set out in the EIA checklist as to whether or not the proposal is considered likely to have a significant effect on the environment.

EIA Screening and Scoping Process

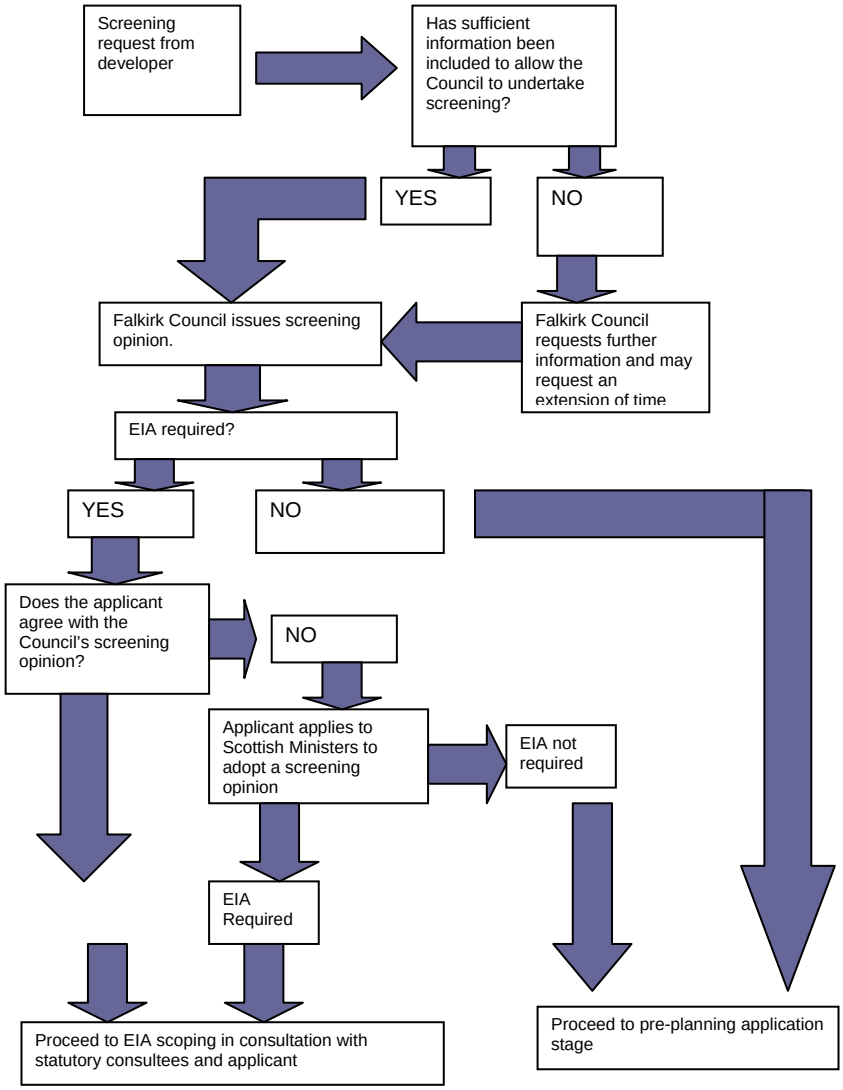

Figure 5: EIA Screening and Scoping Process

3. It is recommended that all potential applicants of wind farm or turbine developments of any scale should contact Development Services for pre-application consultations at the earliest opportunity. This normally happens around or prior to the EIA screening/scoping stage.

4. A screening request should be undertaken by the developer and submitted for consideration by Falkirk Council to determine if an EIA is required. It is vital that Falkirk Council has sufficient information at the screening stage, so the Council may well contact the developer requesting further information on specific impacts/issues. If it is concluded that a proposal requires an EIA then the project will proceed to formal scoping in consultation with statutory consultees and Falkirk Council. If it is found that an application does not require an EIA, should undertake a pre-application scoping exercise with the Council which will inform the planning application.

5. Larger wind energy developments may fall within major scale developments as defined in the hierarchy of developments. Pre-Application consultation is a statutory requirement n this instance and applications must include a Pre-Application Community Consultation Report setting out the consultation process.

6. Whilst formal Pre-Application Consultation is a requirement on National/ Major Development Community engagement is encouraged for all wind energy development.

7. Many single turbines will not require EIA. However, single turbines may require an Environmental Impact Assessment (EIA) if the proposal has the potential to have a significant environmental effect. There are now issues emerging with respect to cumulative impacts in relating to landscape and ecology and each proposal but be assessed in the context of the rapidly changing picture within the Council area.

8. If a proposal is deemed not to require EIA, the headings of an environmental assessment may prove to be a useful basis for identifying issues to be addressed as part of the planning application. Non-EIA proposals will still require a full assessment of constraints including a Landscape and Visual Impact Assessment and ecological studies.

APPENDIX 3: DEVELOPMENT MANAGEMENT LANDSCAPE GUIDANCE FOR NEW LANDSCAPE CHARACTER UNITS

(extracted from Falkirk Council Landscape Capacity Study for wind energy developments.)

1. Capacity within Landscape Character Area 1(i) Kilsyth / Denny Hills

1.1 There is Low-Moderate capacity to accommodate wind energy development. The larger wind turbine typology heights above 50m are unlikely to be acceptable, with potentially significant effects on key visual criteria in particular. Landscape protection should be the objective to maintain the existing landscape character and visual resource, to retain or reinforce its present character and protect its quality and integrity. Small scale development less than 50m in height may be acceptable where it relates well to the existing landscape in terms of scale and design, and where it relates well to existing buildings in terms of scale and location. All applications for smaller turbines will be decided on their own merits and must include detailed landscape and visual impact assessment including consideration of all criteria adopted in this study.

1.2 Turbines located on prominent ridges or which affect important views to the hills or from the hills to other hill features or the Forth, or from / to the Antonine Wall and the 'important' viewpoints at TacMaDoon and the Falkirk Wheel could create significant visual impact.

1.3 Potential cumulative effects of new development seen within views of existing windfarms at Craigengelt and Earlsburn will need careful assessment. There is the potential for 'in combination', 'in succession' and/or 'sequential' cumulative effects from locations within the *Kilsyth / Denny Hills* and when travelling through adjacent character areas which could create the perception of a landscape dominated by wind turbines where the landscape, and in particular visual sensitivity, is unable to accept such a level of change. In particular views from sensitive routes such as the B818 through the Carron Glen require careful analysis.

1.4 Larger turbines would be out of scale with the landscape. Small turbines could be a better fit with the scale and simple landform but they could disrupt the intactness and unity of the continuity of long sweeping horizons, and even smaller turbines would skyline in many views. The more rugged northern end limits development potential. Turbines and associated infrastructure could undermine perceptions of naturalness and sense of seclusion in the southern end away from busy roads.

2. Capacity within Landscape Character Area 2(i) *Denny Hills Fringe*

2.1 There is Low-Moderate capacity to accommodate wind energy development. The larger wind turbine typology heights above 50m are unlikely to be acceptable, with potentially significant effects on key visual criteria in particular. Landscape protection should be the objectiveto maintain the existing landscape character and visual resource, to retain or reinforce its present character and protect its quality and integrity. Small

scale development less than 50m in height may be acceptable where it relates well to the existing landscape in terms of scale and design, and where it relates well to existing buildings in terms of scale and location. All applications for smaller turbines will be decided on their own merits and must include detailed landscape and visual impact assessment including consideration of all criteria adopted in this study.

2.2 All turbines would be highly visible from an extensive area. Views from important viewpoints and sensitive routes cover significant parts of the area, and prominent ridges are important to intervisibility where wind turbines would be particularly visible. There are important views from the *Denny Hills Fringe* to the *Kilsyth / Denny Hills* and across the *Carron Glen* to the *Touch Hills Fringe* and the Touch Hills beyond the Falkirk Council boundary, where wind turbines would be harmful to the setting and landscape context of the landscape character area. The southern part of the landscape character area has a strong visual relationship with the Antonine Wall World Heritage Site (WHS) with views to and from the WHS where development has the potential to affect the setting of the Wall.

2.3 Turbines could intrude on views from popular walking routes. They would contrast with the settled nature and scale of the landscape. When seen in views of features in the distance, for example from the Falkirk Wheel 'important' viewpoint, they could intrude on the composition and affect the perception of distance.

2.4 Turbines would add to the existing clutter of man-made elements and compete visually with the transmitters at Myot Hill, and existing power lines and pylons. They could affect the perception of vertical scale of the hill fringes due to their limited height and small-medium scale, and could detract from the moulded landform of the relatively smooth, interlocking organic forms of small dips and hills.

3. Capacity within Landscape Character Area 2(ii) *Touch Hills Fringe*

3.1 There is Low-Moderate capacity to accommodate wind energy development. The larger wind turbine typology heights above 50m are unlikely to be acceptable, with potentially significant effects on key visual criteria in particular. Landscape protection should be the objective to maintain the existing landscape character and visual resource, to retain or reinforce its present character and protect its quality and integrity. Some areas with an urban fringe character where there is existing infrastructure may be able to accommodate some wind energy development as long as overall landscape character and visual amenity is retained. Small scale development less than 50m in height may be acceptable where it relates well to the existing landscape in terms of scale and design, and where it relates well to existing buildings in terms of scale and location. All applications for smaller turbines will be decided on their own merits and must include detailed landscape and visual impact assessment including consideration of all criteria adopted in this study.

3.2 Key landscape characteristics sensitive to wind energy development are the generally small, enclosed nature of the hill fringes. They feature in views from an extensive area, providing a distinctive raised fringe to the north of the Falkirk

Council area, with hills beyond. Turbines would be highly visible and could contrast with and be out of proportion when seen within views of the existing turbines in the Stirling Council area. Turbines located within views from important viewpoints or on prominent ridges would be particularly damaging. Large turbines would dominate the undulating landform and adversely affect the perception of vertical scale due to the limited height of the hill fringes and their small-medium scale. The areas distinctly rural and diverse character would be diminished by regimented rows of turbines.

3.3 Some wind energy development within the urban fringe may be appropriate where it is in keeping with the character of the landscape, where existing infrastructure, quarrying, pylons and power lines and other development may combine to reduce the impact of new turbines. However if it was considered that the addition of new development would breach the threshold or 'tipping point' of landscape change, the Council would need to consider whether the resulting landscape, visual and cumulative effects would be acceptable, particularly where sited close to residential property.

4. Capacity within Landscape Character Area 3(i) *Slamannan Plateau*

4.1 There is Moderate-High capacity to accommodate wind energy development. Some locations are able to accommodate change where landscape accommodation is the most appropriate objective. There may be important landscape-related constraints in terms of the siting and scale of wind energy development, but suitably designed wind turbine groups which generally fit within the landscape could potentially be accommodated even though they may have an impact on the landscape locally. The landscape could become a landscape with some wind energy development.

4.2 The *Slamannan Plateau* extends over much of the Falkirk Council area, with a complexity and variety of landcover. The gently undulating farmland forms a series of distinctive folds and a pronounced west-east pattern with a generally flattened, softly-contoured landform with unobtrusive valleys where large turbines would dominate. The larger wind turbine typology heights and groups of turbines would be appropriate in some parts of the plateau. In other parts larger turbines would introduce new large-scale industrial elements into a landscape generally free from intrusive elements such as power lines, pylons and other infrastructure.

5. Capacity within Landscape Character Area 3(ii)*Darnrig / Gardrum Plateau Moorland*

5.1 There is Moderate-High capacity to accommodate wind energy development. Some locations are able to accommodate change where landscape accommodation is the most appropriate objective. There may be important landscape-related constraints in terms of the siting and scale of wind energy development, but suitably designed wind turbine groups which generally fit within the landscape could potentially be accommodated even though they may have an impact on the landscape locally. The landscape could become a landscape with some wind energy development.

5.2 The simple, featureless and unsettled composition of landcover on the *Darnrig / GardrumPlateau Moorland* contrasts with the more complex and varied character of the *Slamannan Plateau*. Turbines could relate to the simplicity of landform and absence of notable features. Turbines would not provide unfavourable scale comparison with buildings due to the sparse settlement but the perception of vertical scale due to minor changes in topography and the presence of occasional shelterbelts north of Wester Jaw would limit acceptable turbine height.

5.3 The strong visual integrity of the open moor would be affected by large turbines, and careful siting and design would be necessary to avoid impacts on the more remote and natural areas of moorland. Smaller turbines either in groups or single turbines are likely to appear too small and trivial on the broader, more open moorland areas. Areas of former industrial or quarry workings would be preferable, where infrastructure elements are already present. Turbines should avoid features that add interest to the landscape and which draw the eye – however even relatively small turbines would become new foci in this simple, featureless landscape.

6. Capacity within Landscape Character Area 3(iii) *Castlecary / Shieldhill Plateau Farmland*

6.1 There is Low-Moderate capacity to accommodate wind energy development. The larger wind turbine typology heights above 50m are unlikely to be acceptable, with potentially significant effects on key visual criteria in particular. Landscape protection should be the objectiveto maintain the existing landscape character and visual resource, to retain or reinforce its present character and protect its quality and integrity. Small scale development less than 50m in height may be acceptable where it relates well to the existing landscape in terms of scale and design, and where it relates well to existing buildings in terms of scale and location. All applications for smaller turbines will be decided on their own merits and must include detailed landscape and visual impact assessment including consideration of all criteria adopted in this study.

6.2 In the *Castlecary / Shieldhill Plateau Farmlands*, key visual sensitivities are views from sensitive routes and prominent ridges, other views to landscape features including the Ochil Hills and the *Kilsyth / Denny Hills,* and to the *Firth of Forth*, and views to / from the Antonine Wall. Turbines could intrude on views from a number of popular walking and cycling routes.

6.3 The *Castlecary / Shieldhill Plateau Farmlands* form an undulating, gently rising ridge of high ground when viewed from the lowland, settled urban edge to the north. The setting of the farmlands, which provide an important backdrop and transition between the sheltered, largely urbanised lowland river valley and the exposed moorland plateau, is a key landscape sensitivity. The farmlands are sensitive to larger turbines due to the appreciation of vertical scale. Turbines would be highly visible from an extensive area, where they would add to the clutter of existing man-made elements and visually compete with the Westerglen transmitters, although woodland would provide some containment and screening. The semi-complex character due to the fragmented pattern of agricultural land use, forestry and infrastructure would suggest that some small

scale wind energy development could be accommodated, but impacts on key visual criteria would potentially be significant.

7. Capacity within Landscape Character Area 4(i) *Avon Valley*

7.1 There is Low-Moderate capacity to accommodate wind energy development. The larger wind turbine typology heights above 50m are unlikely to be acceptable, with potentially significant effects on key landscape criteria in particular. Landscape protection should be the objectiveto maintain the existing landscape character and visual resource, to retain or reinforce its present character and protect its quality and integrity. Small scale development less than 50m in height may be acceptable where it relates well to the existing landscape in terms of scale and design, and where it relates well to existing buildings in terms of scale and location. All applications for smaller turbines will be decided on their own merits and must include detailed landscape and visual impact assessment including consideration of all criteria adopted in this study.

7.2 Key landscape characteristics sensitive to wind energy development are the generally small, enclosed nature, and the steep sided valley of the River Avon. Key visual sensitivities are views from 'important' viewpoints at Cockleroy, Cairnpapple in West Lothian and the Avon Aqueduct, and prominent ridges. Turbines would affect the appreciation of the intimate scale of the landscape and could not be physically accommodated on the steep slopes and in the valley bottom. Turbines would diminish the perception of containment and depth of the valley if located within or on the valley tops. Larger turbines would be incompatible in scale, from and style of existing settlement.

7.3 The Avon Valley has a variable pattern of woodlands and small scale farmland, with a strong relationship between landform and landcover. Turbines would affect the proportion and balanced, harmonious pattern of open space / farmland / woodland and would disrupt the strong relationship between landscape elements and appreciation of the diverse land cover. Even small turbines would become a dominant focus in some views even where woodland cover offers some screening.

7.4 Turbines would introduce new industrial features where little currently exists, diminishing the largely undeveloped, strongly rural character of the river valley. Visually turbines would extend beyond the containment of the valley and appear truncated in many views when travelling through the area.

8. Capacity within Landscape Character Area 4(ii) *Carron Glen*

8.1 There is Low capacity to accommodate wind energy development. All wind turbine typology heights above 20m are unlikely to be acceptable, with potentially significant effects on key landscape and visual criteria. Landscape protection should be the objectiveto maintain the existing landscape character and visual resource, to retain or reinforce its present character and protect its quality and integrity. Small scale development less than 20m in height may be acceptable if it relates well to the existing landscape in terms of scale and design, and if it relates well to existing buildings in terms of scale and location.

8.2 Wind energy development could have a significant effect on key landscape characteristics creating significant character change. Key characteristics of this area are the small scale, in parts narrow and enclosed, steep sided valley where the River Carron winds its way between adjacent character areas of the *Lowland Hills* and *Lowland Hill Fringes* LCTs which provide a distinctive and in parts dramatic setting and important backdrop to the valley. Turbines would affect the appreciation of the intimate scale of the landscape and could not be physically accommodated on the steep slopes and in the valley bottom. Turbines would diminish the perception of containment and depth of the valley if located within or on the valley tops.

8.3 Wind turbine development could create significant adverse visual impact in views from sensitive routes and prominent ridges, or which affect views of the surrounding hills and hill fringes which are important to the setting of the area. There are views of the existing turbines at Earlsburn and Craigengelt in Stirling Council area. Turbines on the valley tops would be out of scale and produce an unbalanced view, creating cumulative impacts. The differentiation between neighbouring character types would be lost with wind energy development on the valley sides, and it would be better to restrict turbines to the hills. Visually turbines would extend beyond the containment of the valley and appear truncated in many views from outside the area.

9. Capacity within Landscape Character Area 4(iii) *Bonny Water*

9.1 There is Moderate capacity to accommodate wind energy development. The larger wind turbine typology heights above 50m are unlikely to be acceptable. Landscape protection is requiredin those areas where the objective is to maintain the existing landscape character and visual resource, to retain or reinforce its present character and protect its quality and integrity. In other areas suitably designed wind turbine groups which generally fit within the landscape could potentially be accommodated even though they may have an impact on the urban fringe landscape locally. Small scale development less than 50m in height may be acceptable where it relates well to the existing landscape in terms of scale and design, and where it relates well to existing buildings in terms of scale and location. All applications for smaller turbines will be decided on their own merits and must include detailed landscape and visual impact assessment including consideration of all criteria adopted in this study.

9.2 Turbines would affect important views from sensitive routes to the hills or hill fringes or up to the plateau farmlands which would create significant visual impact. In particular, the *Bonny Water* lowland river valley lies almost completely within the Antonine Wall World Heritage Site buffer zone as shown on the Falkirk Council Local Plan, where wind energy development could create significant visual impact.

9.3 Some wind energy development within the urban fringe may be appropriate where it is in keeping with the character of the landscape, where existing transport routes, associated infrastructure and other development may combine to reduce the impact of new turbines. However if it was considered that the addition of new development would breach the threshold or ‘tipping point’ of landscape change, the Council would need to consider whether the resulting

landscape, visual and cumulative effects would be acceptable, particularly where sited close to residential property.

10. Capacity within Landscape Character Area 4(iv) *Lower Carron /Bonny Water*

10.1 There is Moderate capacity to accommodate wind energy development. The larger wind turbine typology heights above 50m are unlikely to be acceptable. Landscape protection is requiredin those areas where the objective is to maintain the existing landscape character and visual resource, to retain or reinforce its present character and protect its quality and integrity. In other areas suitably designed wind turbine groups which generally fit within the landscape could potentially be accommodated even though they may have an impact on the urban fringe landscape locally. Small scale development less than 50m in height may be acceptable where it relates well to the existing landscape in terms of scale and design, and where it relates well to existing buildings in terms of scale and location. All applications for smaller turbines will be decided on their own merits and must include detailed landscape and visual impact assessment including consideration of all criteria adopted in this study.

10.2 Turbines which affect views from the Falkirk Wheel 'important' viewpoint and other key views could create significant visual impact. In particular, the *Bonny Water* corridor to the south of the area lies almost completely within the Antonine Wall World Heritage Site buffer zone as shown on the Falkirk Council Local Plan, where wind energy development other than small single turbines could create significant visual impact.

10.3 The *Lower Carron /Bonny Water*valley covers a wide swathe of the central Falkirk Council area, between main built up areas with a complexity and variety of land uses including major communication routes. Its character is largely influenced by the surrounding urban and industrial landuses which may combine to reduce the impact of new turbines. However if it was considered that the addition of new development would breach the threshold or 'tipping point' of landscape change, the Council would need to consider whether the resulting landscape, visual and cumulative effects would be acceptable, particularly where sited close to residential property.

10.4 Urban and industrial influences have less of an impact on the character of the River Carron valley east of Denny where mixed farming, woodland and tree belts provide an attractive, more intimate valley landscape with confined views northwards into the wooded hill fringes. Here turbines would affect the appreciation of the intimate scale of the landscape and could not be physically accommodated on the steep slopes and in the valley bottom. Turbines would diminish the perception of containment and depth of the valley if located within or on the valley tops.

11. Capacity within Landscape Character Area 4(v) *Falkirk – Grangemouth Urban Fringe*

11.1 There is Moderate capacity to accommodate wind energy development. All wind turbine typology heights above 20m are unlikely to be acceptable due to the location of the narrow flat valley close to urban development.