Whitelee Windfarm Extension Phase 3

Non-Technical Summary

August 2012

SCOTTISHPOWER RENEWABLES

Preface

This document is the Non-Technical Summary of the Environmental Statement (ES). Copies of the ES and or further information on the proposed Development may be obtained from:

ScottishPower Renewables
1 Atlantic Quay
4th Floor
Glasgow
G2 8JB

Or by telephone: 08452 700798

A printed copy of the ES with Technical Appendices costs £300. In addition, all documents are available (as PDF) on CD/DVD for £20. Further copies of the Non-Technical Summary are also available free of charge.

The ES is available for viewing by the public during normal opening hours at the following locations:

- East Ayrshire Council, Planning and Economic Development, The Johnnie Walker Bond, 15 Strand Street, Kilmarnock, East Ayrshire, KA1 1HU
- East Renfrewshire Council, Planning and Development, 2 Spiersbridge Way, Spiersbridge Business Park, Thornliebank, East Renfrewshire, G46 6NG
- Dick Institute, 1 Elmbank Avenue, Kilmarnock, KA1 3BU
- Galston Community Library, 24 Henrietta Street, Galston, KA4 8HQ
- Stewarton Community Library, Avenue Street, Stewarton, East Ayrshire, KA3 5AP
- Eaglesham Library, Montgomerie Hall, Eaglesham, East Renfrewshire, G76 0LH

Comments on the application for consent (Section 36 application) should be forwarded to the address below:

Energy Consents and Deployment Unit
Scottish Government
4th Floor
5 Atlantic Quay
150 Broomielaw
Glasgow
G2 8LU

Or by email to: representations@scotland.gsi.gov.uk

The image on the cover of this document is a photomontage view of Whitelee Windfarm Extension Phase 3 as will be seen from the B764 at Queenseat Hill. A photomontage is a visualisation which superimposes an image of a proposed development upon a photograph or series of photographs. Photomontages are conventionally generated using computer software and used to illustrate the appearance of proposed wind turbine in the landscape.

This document is printed on recycled paper.

Non-Technical Summary

Figures

1 Introduction

1. This Non-Technical Summary (NTS) summarises the Environmental Statement (ES) for Whitelee Windfarm Extension Phase 3. The ES accompanies an application to the Scottish Ministers for consent under Section 36 of the Electricity Act 1989, as amended by the Planning etc. Act (Scotland) 2006, for the construction and generation of electricity.

2. Whitelee Windfarm Extension Phase 3 is referred to in this NTS and in the ES as 'the proposed Development'. It comprises five turbines with a maximum blade tip height of 111 m to provide an installed capacity of up to 12 MW, together with associated infrastructure such as access tracks and electrical connections.

3. The area required for the proposed Development is approximately 211 hectares, located immediately to the northwest of Whitelee Windfarm, to the south of the B764 and northeast of Kilmarnock on Eaglesham Moor, as shown on NTS Figure 1 and NTS Figure 2.

4. When compared to the East Kingswell Windfarm which was previously proposed at the same site, the most notable differences are a deletion of two turbines and a reduction of the maximum turbine tip height by 29 m. Associated with this is fewer access tracks, fewer watercourse crossings and borrow pits, and increased separation from residential receptors (now over 1 km).

5. Environmental effects of the proposed Development have been studied as part of an iterative design process, the results of which are presented within the ES and summarised in this NTS. These documents inform readers of the nature of the proposed Development, likely environmental effects and measures proposed to protect the environment, during site preparation, construction, operation and decommissioning.

6. Assessments as reported in this ES have been informed by work previously undertaken for East Kingswell Windfarm, as well as new desk-based assessment, field surveys and consultation. Further details on the site history and selection are provided in Section 4 of this NTS.

1.1 Renewable Energy Policy

7. The UK Government and the Scottish Government are committed to ensuring that an increased proportion of electricity is generated from wind power and other renewable energy sources. Improvements in technology and rising fossil fuel costs have resulted in the cost of wind power converging towards the costs of conventional sources of electricity. Further significant growth in the wind energy sector can therefore be expected.

8. Scotland in particular has a significant wind resource. The report 'Scotland's Renewable Resource 2001' considered a range of available renewable energy technologies examining associated development constraints and costs. The key conclusion in relation to onshore wind development was that the resource is widespread and is the cheapest of the technologies considered and on the basis of cost, onshore wind energy can be expected to contribute to the bulk of near-term government targets.

9. The Climate Change (Scotland) Act 2009 aims for an 80% reduction in Scotland's greenhouse gas emissions by 2050 and includes an interim target of a 42% reduction by 2020 (compared to 1990 levels). In 2007 the Scottish Government set a target for the supply of 50% of Scotland's electricity from renewable sources by 2020, and in May 2011 revised its targets and now aims to provide 100% of Scotland's electricity generation from renewable sources by 2020.

2 Environmental Impact Assessment (EIA)

10. Under the Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2000 (the EIA Regulations), any Electricity Act 1989 Section 36 development considered likely to have

significant effects on the environment must undergo the process of EIA and an ES must be submitted with the application.

11. Potential environmental effects have been assessed to identify any that may be significant in the context of the EIA Regulations. Mitigation is proposed where possible to prevent, reduce or offset significant effects.

12. In accordance with the EIA Regulations, the assessment has also considered 'cumulative effects'. By definition these are effects that result from incremental changes caused by past, present or reasonably foreseeable actions together with the proposed Development.

3 Site Selection and Alternatives

13. ScottishPower Renewables' site selection process is designed to identify potential windfarm sites that are financially and technically viable, environmentally acceptable, most likely to obtain planning approval, and make meaningful contributions to Scotland's targets for renewable energy generation.

14. ScottishPower Renewables is committed to avoiding developing windfarms in areas where there will be an unacceptable effect on environmentally designated sites and where mitigation measures are likely to be unacceptable. ScottishPower Renewables is also committed to not considering sites that have an unacceptable effect on landscape character or amenity of National Parks and National Scenic Areas, and special consideration is attributed to internationally and nationally important species and habitats in the wider area.

15. Site selection work by ScottishPower Renewables is an ongoing process, whereby a list of candidate sites is maintained and updated as new opportunities are identified and candidate sites move into development. Candidate sites are identified initially through a desk based exercise which includes the consideration of issues such as site capacity, distance from properties, exposure and topography, site access and proximity to a potential electricity grid connection point.

16. These sites are then assessed in more detail including reviews of relevant planning policy and guidance, preliminary surveys to identify the potential for protected species, in particular birds; identification of any potential aviation/Ministry of Defence (MoD) issues, as well as other potential issues such as land ownership. Consultation is also undertaken at this stage with key stakeholders such as local authorities, SNH and RSPB, to identify potential 'high level' issues which may prevent the progression of a site,

17. The proposed Development site was short-listed due to a number of factors, including the following:

- good wind resource;
- good access to site;
- lack of statutory nature conservation designations on the site;
- close to a potential grid connection point;
- relatively sparsely populated area;
- good landscape fit;
- opportunity to extend an existing windfarm, which increases operation efficiency while reducing additional effects when compared to a new site for a project of a similar size;
- preferred area for windfarm development as identified in the Development Plan; and
- location in which a development can accord with the principles set out in Scottish Planning Policy (SPP) in relation to renewable energy.

18. A combination of environmental, design and technical parameters has resulted in the proposed layout. Although the layout design was landscape driven, other environmental considerations such as sensitive habitats, watercourses, cultural heritage features and noise modelling also influenced the design. Finally, technical elements such as spacing, wind capture and ground conditions were considered during the design process. In line with best practice, consultation feedback (refer to Section 6 of the NTS) from the public and from consultees such as the Councils, Historic Scotland, SEPA and SNH were also taken into consideration during the iterative design process.

19. The design was also progressed and refined taking into account feedback received following submission of the East Kingswell Windfarm planning application (2010) and appeal (2011) (refer to the planning application history provided below).

3.1 Planning Application History

20. A planning application and supporting documents including an ES were submitted to East Ayrshire and East Renfrewshire Council on 25 May 2010 for the proposed 7 turbine East Kingswell Windfarm. In East Ayrshire, the application was recommended for approval by the Head of Planning and Economic Development. However, the planning committee refused permission for the planning application on 12 November 2010 for the following reasons:

- The Council considers that the proposed Development is contrary to Policy 7, parts (D) and (G), of the approved Ayrshire Joint Structure Plan 2007 and Policies CS12 and CS14 of the adopted East Ayrshire Local Plan 2010 in terms of a significant and unacceptable adverse cumulative visual impact on the landscape and on the amenity of the surrounding area and residential properties.
- The Council considers that the proposed Development would result in a significant and unacceptable noise impact on neighbouring residential properties given its proximity to such residential properties.

21. In East Renfrewshire, the application was not determined and was withdrawn at the request of ScottishPower Renewables on 13 January 2012.

22. An appeal against the refusal by East Ayrshire Council was lodged with the Scottish Ministers by ScottishPower Renewables on 07 February 2011 and was dismissed by the Reporter on 28 April 2011. The Reporter did not accept the Council's objection on noise grounds and found that the visual/landscape cumulative effects at a distance would be minimal. However, the appeal was dismissed on the grounds that the Reporter considered that the local landscape and visual effect on three dwellings (Kingswell, Kingswell Bridge and Cauldstanes) and on parts of the M77, A77 and B764 would be unacceptable:

- The proposal was not consistent with policies ECON 6 and ECON 7 (criteria A, D and G) of the structure plan and policies CS12 and CS14 of the adopted local plan and is therefore not consistent with the Development Plan.
- The proposal would result in an unacceptable adverse cumulative visual impact on the landscape and amenity of the surrounding area and residential properties at Kingswell, Kingswell Bridge and Cauldstanes in particular.

23. Following evaluation of the Reporter's decision and further assessment, ScottishPower Renewables concluded that the site, which lies within an Area of Search for wind energy as defined in the relevant Development Plan, continues to offer good potential for windfarm development, provides an opportunity to enhance the existing benefits of Whitelee Windfarm and that a re-designed wind energy development comprising a small extension to Whitelee Windfarm was capable of overcoming the Reporter's concerns.

24. The site layout and design of the proposed Development has been developed in response to the key considerations raised by the Reporter, particularly in terms of potential effects on nearby residential receptors. The proposed Development is therefore a different proposal to East Kingswell

Windfarm and has been reassessed in terms of its potential environmental effects. It is considered that the proposed Development fully addresses the reasons for refusal of East Kingswell Windfarm.

25. Due to its location immediately neighbouring Whitelee Windfarm, as well as the shared use of infrastructure, the proposed Development is being submitted as an extension to Whitelee Windfarm and is required to be determined by the Scottish Government as an application under Section 36 of the Electricity Act 1989.

4 Windfarm Proposal

26. The layout of the proposed Development is shown on NTS Figure 2. The operational windfarm will include the following key components:

- five turbines (with external transformer housing);
- hardstanding areas at each turbine base;
- on site access tracks and associated watercourse crossings;
- substation building and compound;
- one communication mast; and
- on-site underground cabling.

27. In addition to the above components of the operational windfarm, the construction phase will involve the following:

- approximately 37 hectares of forestry clearance to accommodate three turbines, a construction compound, borrow pit and some sections of access track;
- construction compound and laydown area;
- demolition of Moor Farm;
- two temporary power performance masts; and
- one new borrow pit and associated storage area.

28. It is estimated that approximately 76,000 m^3 of stone will be required for construction of the proposed Development (including access tracks, structural fill beneath turbine foundations, and hardstandings at turbine bases and compounds). Additionally, approximately 3,700 m^3 of harder capping material or equivalent will be necessary to form a hardwearing access track surface and it assumed that this will not be obtained from the borrow pit and will instead be transported to site.

29. It is estimated that the total (permanent) land-take of the windfarm due to foundations, new site access tracks and hardstandings (including substation compound) will be approximately 3.7 hectares (less than 2% of the development area of approximately 211 hectares). During the construction period an area of approximately 13.7 hectares will be required to accommodate the construction of the windfarm including temporary works i.e. the construction compound area, borrow pit and storage area, which will be restored following completion of the works.

30. As a result of any possible issues encountered during site construction (e.g. unsuitable ground conditions), it may be necessary to microsite elements of the proposed Development (i.e. revise the location of infrastructure to a more suitable place). Any micrositing will be agreed in advance with specialist advisors such as ecologists and/or archaeologists and also be within any micrositing allowances stated in the development consent.

31. Technical studies have been undertaken to identify potential access routes to the proposed Development site, and these have been supplemented by the experience gained during the construction of Whitelee Windfarm. This has enabled the identification of routes suitable for the road transportation of abnormal loads such as wind turbine components (e.g. tower sections, nacelle and blades) using specialised heavy transport vehicles as well as HGVs and other vehicles.

32. It is anticipated that turbine towers, nacelles and blades will be delivered to Port of Ayr harbour or Glasgow's King George V Dock. These will then be transported to site via the M77 and B764 roads, using the same route that was used for the delivery of turbine components for Whitelee Windfarm and Whitelee Extension.

33. The principal construction access to the proposed Development will be from the Whitelee Windfarm Operations entrance off the B764 at Lochgoin, and via the Whitelee Windfarm spine road. As with Whitelee Windfarm, HGV and abnormal load traffic will be prohibited from accessing the site via Eaglesham village.

34. The proposed Development would require a connection to the main grid network, and a number of options are being considered for the grid connection. It is anticipated that the existing Whitelee Extension substation building and compound located to the east of Rough Hill would be utilised for the proposed Development and no changes would be required to these to enable this. However, to allow for flexibility in grid connection, the proposals also include a new substation building and compound within the development area, which would be constructed if the Whitelee Extension substation building and compound were not to be utilised for the proposed Development. The grid connection proposals are outwith the scope of this assessment and will be the subject of a separate application under Section 37 of the Electricity Act, if required.

35. The proposed Development includes proposals to demolish Moor Farm (located within the application boundary). Moor Farm is currently owned by ScottishPower Renewables and is not currently inhabited. Despite measures having been taken to secure and maintain the building it has been subject to vandalism, anti-social behaviour and theft of materials of value (such as copper), therefore it has to some degree fallen into disrepair. It is considered that the property would no longer be appropriate for residential use given its location within the windfarm site and close proximity to turbines. The property no longer forms part of an agricultural unit and there is little land associated with the property to facilitate its operation as a viable agricultural unit. Furthermore, agricultural use of the property is no longer likely since the surrounding area would be used primarily for energy generation. Leaving the property vacant may continue to attract crime (e.g. vandalism) and further disrepair, detracting from the visual amenity of the area. ScottishPower Renewables has investigated the possibility of its conversion for use as an operational building for the windfarm, but it is not capable of meeting operational requirements for such a facility. Taking these factors into account, there is considered to be no reasonable prospect of the building being occupied.

36. The site is under private ownership and to the north includes an area of approximately 72 hectares of commercial plantation forestry at East Kingswell, of which 37 hectares would be felled for the proposed Development as stated previously. It is anticipated that the removal of forestry would be undertaken at the start of the construction period. There is an existing forestry access track serving East Kingswell plantation (refer to NTS Figure 2) to the B764 which may be used to enable felling, chipping and timber extraction. Previous consultation with East Ayrshire Council Roads and Transportation Service (December 2009) confirmed the Council would not object to the use of the existing track for this purpose.

37. The lifespan of the proposed Development is 25 years (although the period for which consent is sought is 28 years to allow for construction and decommissioning). The decommissioning period for a windfarm of this size would typically be approximately six months.

5 Legal and Policy Framework

38. The proposed Development falls predominately within the boundary of East Ayrshire Council. However, approximately 500 m (of the total 3 km) of proposed access tracks, as well as a proportion of existing access roads for Whitelee Windfarm and Whitelee Extension which would be used for the proposed Development, are located within East Renfrewshire.

39. The Scottish Government influences the planning system through legislation, White Papers, the National Planning Framework, Scottish Planning Policy (SPP), Circulars, Planning Advice Notes,

and approval of strategic planning documents. These were reviewed in detail as part of the EIA process, together with relevant policy including local authority Development Plans.

40. SPP is of particular relevance to the proposed Development as it contains policy on renewable energy. SPP sets out the Scottish Ministers' commitment to increasing the amount of electricity generated from renewable sources, with the target for 2020 of 100% of Scotland's electricity and heat demand to be generated by renewable resources as noted in Section 3 of this NTS, with hydro-electric and onshore wind power expected to remain the main sources of renewable energy supply. The SPP indicates that planning authorities should support the development of a range of renewable energy technologies, guiding development to appropriate locations. Development Plans should support all scales of renewable energy development in order to optimise an areas potential for renewable energy whilst taking into account relevant economic, social, environmental and transport issues. The SPP also deals specifically with windfarm development, identifying that planning authorities should generally support the development of windfarms in locations where technology can operate efficiently.

41. The majority of the site including the locations of all turbines lies within East Ayrshire, with the existing spine road and a small length of access track lying within East Renfrewshire. The proposed Development is located within an 'Area of Search' for windfarm development in the Ayrshire Joint Structure Plan and the area of the site within East Ayrshire is location in a 'Preferred Windfarm Area' in the East Ayrshire Local Plan.

6 Scoping and Consultation

42. The purpose of scoping and pre-application consultation is to:

- ensure that statutory consultees and other bodies with a particular interest in the environment are informed of the proposal and provided with an opportunity to comment at an early stage in the EIA process;
- obtain baseline information regarding existing environmental site conditions;
- establish key environmental issues and identify potential effects to be considered during the EIA;
- identify those issues which are likely to require more detailed study and those which can be justifiably excluded from further assessment; and
- provide a means of confirming the most appropriate methods of assessment.

6.1 Scoping

43. Scoping is undertaken at the outset of the assessment process according to the guidance provided in Planning Advice Note (PAN) 58: Environmental Impact Assessment (Scottish Executive, 1999). A request for a scoping opinion was submitted by ScottishPower Renewables to East Renfrewshire Council and East Ayrshire Council in October 2009 in relation to the proposed East Kingswell Windfarm. The scoping opinions were received from the two councils in December 2009.

44. The request for a scoping opinion also formed the basis for early consultation with a number of organisations, who were asked for relevant information, opinions on the scheme and views on the proposed assessment methodologies.

45. Further consultation with statutory consultees has been undertaken in 2012 in relation to the current development proposal and submission of a Section 36 application for the proposed Development. An updated scoping opinion was not requested as the substance of the East Kingswell Windfarm scoping opinion is considered to remain valid (as confirmed in consultation).

46. The following key environmental aspects have been assessed:

- landscape and visual;

- ornithology;
- geology, soils and hydrogeology (including a peat landslide hazard and risk assessment);
- surface water;
- ecology;
- archaeology and cultural heritage;
- noise;
- transport;
- land use, socio-economics and recreation; and
- other issues (includes telecommunications, television and aviation navigational equipment; shadow flicker; safety and security; ice throw and air and climate).

6.2 Consultation

47. The process of consultation is critical to the development of a comprehensive and balanced ES. Views of the key statutory and non-statutory consultees serve to focus the environmental studies and to identify key specific issues which may require further investigation.

48. A comprehensive understanding of the requirements/views of consultees has been gained, informed by the project development and environmental assessments for the adjacent Whitelee Windfarm and Whitelee Extension. In addition to the consultation undertaken in 2009-2010, a range of statutory bodies, non-statutory bodies, community councils and landowners were consulted in 2012 specifically in relation to the proposed Development.

49. Public consultation is seen as a key element of the environmental assessment process. The following public consultation was carried out:

- A Public Information Day was held in Fenwick on 25 April 2012 to provide information to local residents, and to gain feedback on the proposals.
- The Public Information Day was advertised in local newspapers, posters put up in venues in local communities, and leaflets describing the proposals and advertising the event were sent to nearby properties and to surrounding community councils.
- Consultation letters were issued to all community councils whose area is within or adjoins the land where the proposed Development is situated.
- Individual meetings were held with members of the public both as individuals and groups, in response to requests.

50. The information available at the Public Information Day included plans of the proposed site layout, information boards explaining the key potential environmental effects, and photomontages to illustrate anticipated views. Representatives of Jacobs, OPEN and ScottishPower Renewables were also available to provide additional information and answer queries. A computer laptop equipped with Windfarm software was also available, allowing members of the public to see likely views from requested locations. Attendees were invited to complete feedback forms to provide input to the ongoing progression of the proposals. Information received at the Public Information Day was fed back to the assessment team and incorporated into the assessment process.

7 Landscape and Visual

51. The landscape in this area has been modified by windfarms, including most notably, the operational Whitelee Windfarm and Whitelee Extension. Whitelee Windfarm contributes strongly to the baseline landscape character and is located immediately adjacent to the proposed Development. Although the proposed Development extends the influence of turbines within the landscape, the effect on landscape character is not assessed to be significant. There will also be

no significant effects on the landscape character of designated landscapes within the study area, such as Regional Scenic Areas and Gardens and Designed Landscapes.

52. To the south and east of the proposed Development, there are no significant effects, as the proposed Development will be seen behind and in the context of Whitelee Windfarm and Whitelee Extension. To the north and west, the proposed Development occasionally introduces new elements into views where there is limited visibility of Whitelee Windfarm or Whitelee Extension and it would therefore have a greater effect on views from the immediate north and west. These include localised increased effects on short sections of three route corridor receptors (M77, A77 and B764) and on residential viewpoints in a localised area to the north and west of the proposed Development. On balance, the effect of the proposed Development has been assessed as not significant on the M77, A77 and B764 and dwellings in the locality to the north and west of the site. This is primarily due to existing forestry in the northern and western part of the development area being retained over the long term operational life of the proposed Development.

53. In addition, the effect of the proposed Development on all other route corridors and dwellings in the study area has been assessed as not significant. The viewpoint assessment included consideration of 19 viewpoints and also settlements in the study area including Fenwick, Eaglesham, Kilmarnock and Stewarton.

54. The landscape and visual assessment also assessed the potential cumulative effect of the proposed Development in conjunction with other operational, consented, and application stage windfarms. No significant cumulative effects were identified on the landscape character and visual amenity of the study area, with the exception of Viewpoint 18 (Cauldstanes) which is assessed as significant if the application stage Harelaw Renewable Energy Park and Moorhouse Farmers Windfarms are consented and built. The integration of the proposed Development with Whitelee Windfarm and Whitelee Extension results in it being less apparent as an addition to the cumulative situation. The design of the turbine layout ensures that it 'fits' together visually with Whitelee Windfarm and effectively reads as a single windfarm, which reduces the cumulative effects considerably across what may already be described as a windfarm landscape.

55. In general, the cumulative effect of the proposed Development is likely to be higher when application stage windfarms are considered, as a result of the combined effect of several large scale windfarm applications in the area around Whitelee Windfarm, notably Moorhouse Farmers Windfarm and Harelaw Renewable Energy Park. In this scenario, the proposed Development will contribute to reducing the space and slightly increasing the visual linkage between Whitelee Windfarm and several large application stage windfarms. These will form an extensive windfarm landscape if they are consented and constructed, but in itself the proposed Development is not material to the creation of a windfarm landscape and the five turbines proposed represent a relatively low change to the cumulative scenarios considered.

56. The assessment has confirmed that in all cases the predicted effects of the proposed Development are long-term (persisting for the life of the windfarm) but reversible, such that following decommissioning these effects will cease to exist.

8 Ornithology

57. The area in and around the proposed Development is mainly grass moorland and private commercial conifer plantation forest. The area supports an assemblage of birds typical of these habitats in central Scotland.

58. Species of high conservation importance (hen harrier, merlin, peregrine, short-eared owl, barn owl and golden plover) are present in the surrounding area but do not appear to use the proposed Development site for breeding. Species of moderate conservation importance are present, breeding in small numbers (black grouse, curlew, skylark, grasshopper warbler, cuckoo, linnet, lesser redpoll, and song thrush). Herring gulls overfly the site in small numbers year round. Of these species of high or moderate nature conservation importance only short-eared owl and black grouse showed activity in the vicinity of the proposed Development which merited further

assessment of potential effects. The proposed Development does not appear to be located on a regularly used migration route, or corridor used for local movements by wildfowl or waders.

59. Potential effects of the proposed Development on birds were determined by considering the nature conservation importance of each species and the potential magnitude of each effect. In making assessments on significance of effects, consideration was given to the status of, and trends within, regional and national populations.

60. The total land-take by the proposed Development would result in the permanent loss of a very small proportion of the site's habitat. The adverse effects on birds due to this relatively small loss are not considered to be significant.

61. Approximately 72 hectares of plantation forest exist on the proposed Development. Of this, approximately 37 hectares will be felled, however some areas will be subsequently replanted with mixed broadleaf trees and some areas will remain open to form part of a bog (blanket mire) restoration area. The adverse effects on birds due to these habitat modifications are not considered to be significant. The replanting and habitat modification will be of benefit to regional populations of some species of high or moderate conservation concern. Local black grouse nesting and foraging habitat will be improved, woodland habitat for species such as song thrush and lesser redpoll will be retained or replanted, and curlew and skylark which currently occur adjacent to the conifer plantation will benefit from re-instatement of bog habitats.

62. Disturbance of birds and their habitats during the construction and decommissioning phases of the proposed Development is predicted to have short term adverse effects of low or negligible magnitude on birds. Similarly, disturbance of birds due to the operation of the proposed Development, and the risk of collision with rotating rotor blades, are not considered to be significant effects on bird populations.

63. The cumulative effects of the proposed Development and other existing and planned developments in the area are considered unlikely to have a significant effect on existing bird populations.

64. With the proposed mitigation measures in place, it is concluded that the proposed Development would not result in any residual ornithological effects that are considered to be significant in the context of the EIA Regulations.

9 Geology, Soils and Hydrogeology

65. The proposed Development is located in the upper reaches of the Kilmarnock Water catchment. Much of the site has areas of peat, underlain by glacial till, and locally, by alluvial and sand and gravel deposits. The solid geology beneath the site is mainly carboniferous basalt.

66. Potential effects of construction including forestry felling, operation and decommissioning of the proposed Development on geology, soils and hydrogeology were identified and assessed.

67. The potential for ground instability as a result of peat slide was assessed through a combination of desk-based review, site reconnaissance and a programme of peat probing and sampling to identify the extent and depth of peat and its characteristics. These results were used to inform and refine the layout design in terms of turbine locations, access tracks, borrow pit and site compound.

68. Sensitive receptors such as habitats of high ecological interest that may be dependant on or affected by groundwater were also considered in terms of potential effects on the stability of such habitats.

69. Mitigation measures, based on best practice, have been proposed to control the effects on the receiving environment. The measures have been informed by experience gained on Whitelee Windfarm and Whitelee Extension with regard to potential site-specific issues and the most appropriate measures to avoid or reduce these. The activities on the Whitelee Windfarm construction site were managed in close liaison with Scottish Water and SEPA. These

arrangements are being continued during construction of Whitelee Extension and would be applied during the proposed Development. Mitigation will be detailed within a site Pollution Prevention Plan and Construction Environmental Management Plan (CEMP) to be implemented during the construction of the windfarm. These plans will be produced following consultation and agreement with SEPA and will incorporate a Pollution Incident Plan, including emergency procedures.

70. The potential for cumulative effects from the construction of the proposed Development in combination with the other windfarms in close proximity, including the ongoing operation of Whitelee Windfarm was also considered and has been assessed as not significant.

71. With the proposed mitigation measures in place, it is concluded that the proposed Development would not result in any residual effects on geology, soils or groundwater that are considered to be significant in the context of the EIA Regulations.

10 Surface Water

72. The proposed Development is located in the upper reaches of the Kilmarnock Water and is situated on open moorland and coniferous plantation. There are two watercourses that flow through the site: Kingswell Burn and Drumtee Water, along with a number of minor tributaries arising from natural springs and streams of up to approximately 2 m in width. In addition, a network of artificial drainage ditches up to approximately 1 m in width is located within the forestry area, which is a common feature of plantations of this type. Exposed peat and wetland vegetation are common characteristics on the banks of watercourses in the area.

73. Potential effects associated with forestry felling, construction, operation and decommissioning of the proposed Development on hydrology and surface water quality were identified and assessed.

74. The Kingswell Burn is a key tributary of the Kilmarnock Water which drains part of the proposed Development site and is a designated Drinking Water Protected Area under the Water Framework Directive (WFD) and is classified under SEPA's WFD classification scheme as being of 'poor' status. A fish habitat survey confirmed that none of the watercourses within the site area are likely to contain salmon or migratory sea trout due to the known presence of obstructions downstream, but all are likely to support populations of resident brown trout, particularly in their lower reaches.

75. Potential for hydrological and water quality effects is highest during the forestry felling and construction phases. These can include changes to the natural drainage patterns, effects on runoff, erosion and sedimentation, effects on water supplies, and risk of pollution incidents.

76. Mitigation measures, based on best practice, have been proposed to prevent or reduce the effects on the receiving water environment. As noted above in the summary for Geology, Soils and Hydrology, mitigation measures during construction will be detailed within a site Pollution Prevention Plan (PPP) and Construction Environmental Management Plan (CEMP) These plans will be similar to those successfully implemented for Whitelee Windfarm and will also take into consideration the measures agreed with SEPA for Whitelee Extension, construction of which is due for completion later in 2012. An Environmental Incident Plan or similar will be implemented during the operational phase of the Windfarm, following the approach used within the operational Whitelee Windfarm site.

77. With the proposed mitigation measures in place, residual effects on the hydrological and water quality regime are of Negligible or Slight significance and are not considered significant in the context of the EIA Regulations.

11 Ecology and Nature Conservation

78. The proposed Development is located in an area of mainly grass moorland and coniferous plantation, as noted above in the summary of Ornithology. Several species of ecological importance are present within these habitats.

79. Potential effects were considered on habitats and species present, and the ecological survey results were used to identify Valued Ecological Receptors (VERs) on the site. This approach is based on guidelines produced by the Institute of Ecology and Environmental Management (IEEM, 2006), and attributes significance of an effect by taking into account the value level of a receptor and the magnitude of the ecological effect.

80. Baseline habitat surveys followed standard methodologies of Phase 1 habitat survey supplemented by the National Vegetation Classification (NVC) survey. The majority of the survey area has been mapped as commercial plantation forestry and wet modified bog, with areas of improved, semi-improved and marshy grassland. A number of rides and clearings within the plantation woodland contained a mosaic of habitats, predominantly forms of wet modified bog, marshy grassland and acid flush vegetation. One area was defined as blanket bog and one area of relatively undamaged wet modified bog was identified.

81. Based on the baseline data available for the site and surrounding area, it was established that red squirrel and badger were unlikely to be present within the development area. However, habitat was potentially suitable for otter, water vole, bats and reptiles. As agreed in consultation with SNH, the 2009-10 survey data for the site were updated in 2012 through targeted surveys. Evidence of bats and otter were recorded during the 2009 and 2012 surveys respectively, but there was no evidence of water vole in either year. No reptiles were identified in 2009-2012, but an adder skin was recorded in 2012 and the site is considered to have potentially suitable habitat for reptiles.

82. In terms of freshwater fish habitat, five watercourses were identified within the proposed Development area as likely to support salmonids (particularly brown trout) which have been identified as a VER. Two of the watercourses, Collorybog Burn and Drumtee Water, would be directly affected by the proposed Development, i.e. access tracks would cross these watercourses. However, due to existing barriers in the watercourses no migratory salmonids (salmon or sea trout) are likely to be present within the site and consequently significant effects on migratory salmonids are not anticipated.

83. Terrestrial habitat recorded in the survey area included areas of bog/marsh, woodland/forestry and grassland. A total of 13 habitat categories were identified, of which blanket bog, wet modified bog and marshy grassland were identified as VERs.

84. The site layout has been designed to ensure that the number of turbines and associated access tracks proposed within ecologically sensitive habitats is minimised. Further mitigation proposed includes adherence to best practice during construction and pre-construction surveys for protected species.

85. With the proposed mitigation measures in place, no effects of greater than Minor significance are predicted on the VERs. Consequently, there are no effects considered significant in the context of the EIA Regulations.

12 Cultural Heritage

86. The proposed Development is located in an area with several cultural heritage features (referred to as ‘assets’) of local or less than local importance, most of which are associated with historical farming use. Within 10 km there are a range of cultural heritage assets of regional or national importance, such as Category A or B Listed Buildings.

87. Potential direct effects on cultural heritage assets within the development area were assessed (such as demolition or disturbance), and potential for effects on the historic landscape and on the setting of cultural heritage assets was also considered for sites in the wider study area.

88. The proposed Development includes proposals to demolish Moor Farm (located within the application boundary), which is a cultural heritage asset assessed to be of local importance. Mitigation in the form of preservation by record is proposed, resulting in a residual effect of Negligible significance. No effects are predicted on the remaining 21 cultural heritage assets

identified within the application boundary, as the sympathetic siting of turbines and infrastructure through the iterative design process has avoided known sites.

89. A physical effect on six historic landscape types is predicted resulting from physical loss and changes in character. The significance of these effects is predicted to range from Negligible to Minor.

90. A total of 10 Minor and 28 Negligible significance effects are predicted on the settings of Scheduled Monuments, Category A Listed Buildings, Category B Listed Buildings and Gardens and Designed Landscapes located within 10 km of the proposed Development. Beyond 10 km no discernible effects on the setting of cultural heritage assets are predicted.

91. The construction of windfarms has the potential to adversely affect unknown (i.e. previously unrecorded) archaeological sites. Although such effects can be permanent and irreversible they nonetheless can be mitigated by an archaeological watching brief during construction, recording and publication. This would be agreed with the archaeological advisors to the local authority, West of Scotland Archaeology Service (WoSAS).

92. With the proposed mitigation measures in place, residual effects on cultural assets are of Negligible or Minor significance and are not considered significant in the context of the EIA Regulations.

13 Noise

93. Noise is emitted by equipment and vehicles used during construction and decommissioning of the proposed Development. Operational turbines emit noise from the rotating blades as they pass through the air, with the amount of noise emitted tending to vary depending on the wind speed. The level of noise emitted by the sources and the distance from those sources to the receiver locations are the main factors used to determine levels of noise experienced at receptor locations.

94. Potential for construction noise or vibration effects was considered through a desk-based assessment using an indicative construction programme and on the assumption that the proposed Development would be constructed using standard and common methods. Noise levels were calculated for receiver locations closest to the areas of work, and compared to guideline and baseline values. Construction noise, by its very nature, tends to be temporary and highly variable and therefore much less likely to cause an adverse effect. Various mitigation methods have been proposed to restrict the effect of construction noise wherever practical to do so, the most important of these being proposed restrictions of working hours for those activities that may give rise to audible noise at the surrounding properties and for HGV deliveries to the site. Turbine deliveries may take place outside these core times, the timing of which will be determined by agreement with Strathclyde Police and the local authority roads department. Those activities that are unlikely to give rise to noise audible at surrounding properties may continue outside of these stated hours.

95. Noise levels from operation of the turbines have been predicted for those locations around the site most likely to be affected by noise. Predicted noise levels take full account of the potential combined effect of the noise from the Whitelee Windfarm (including Whitelee Extension), the consented Sneddon Law Community Windfarm, and the proposed Harelaw Renewable Energy Park and Moorhouse Farmers Windfarm. Surveys undertaken as part of the consenting process for Whitelee Windfarm (including Whitelee Extension) were used to establish existing baseline noise levels at a number of the properties adjacent to the site. Operational noise limits have been derived from existing baseline environmental data following the method stipulated in national planning and best practice guidance. Predicted operational noise levels have been compared to the limit values and demonstrate that turbines of the type and size proposed can operate within the noise limits. It is concluded therefore that operational noise levels from the proposed Development will be within levels deemed, by national guidance, to be acceptable for wind energy schemes.

96. Decommissioning may include some similar potential noise sources to those of construction, but due to the more limited extent of works required is likely to result in less noise than during construction of the proposed Development.

97. With proposed mitigation measures in place, there are no noise or vibration effects that are considered significant in the context of the EIA Regulations during construction, operation or decommissioning.

14 Access, Traffic and Transport

98. The proposed Development is located in a rural area, to the south of Glasgow and south of the B764 Eaglesham Road. Access to the site is anticipated via the Lochgoin entrance to the existing Whitelee Windfarm, off the B764.

99. Potential effects of increased traffic on the public road network during construction, operation and decommissioning of the proposed Development were identified and assessed. The assessment considered both the local road network and the wider area such as the anticipated route by which large components such as turbine blades would be transported after shipping arrival at docks in either Glasgow or Ayr.

100. Construction traffic is anticipated to be generated over an 8.5 month period and will result in increases of traffic flows on the trunk roads leading to the site and on the A77 and B764 local roads. Although it is anticipated that the on site borrow pit will provide the majority of stone/hardstanding requirements, to ensure that a worst-case scenario was assessed, that traffic assessment assumed that all material would instead need to be transported to the site. When considering actual volumes of traffic, the predicted flows are within the practical operating capacity of these trunk and local/minor roads and the environmental effect is not considered to be significant.

101. Mitigation measures are proposed to reduce construction traffic effects including the use of appropriate approved access routes to and from the site, avoidance of heavy construction traffic travelling through Eaglesham village, and preparation of a Traffic Management Plan (TMP) prior to commencement of construction. The TMP would include specific mitigation measures for abnormal loads such as timing of deliveries outside peak flow hours, and police escorts where necessary.

102. Operation and maintenance of the windfarm will generate small volumes of additional light vehicle traffic (such as cars and vans) over its operational lifetime but will not have a significant effect on the surrounding road network. Periodically there may be a need for major maintenance intervention including turbine or substation component replacement. These components would require a small number of abnormal loads, for example to replace rotor blades, transformers and gearboxes.

103. As it is likely that the turbine foundations, access tracks and underground cables would remain in situ after decommissioning, the traffic generated during decommissioning would be less than generated during construction. This traffic will not have a significant effect on the surrounding road network assuming there are no major changes to the existing road network during the lifetime of the windfarm.

104. A cumulative assessment has also been undertaken of the effects of the proposed Development, taking account of additional windfarm developments currently in the planning system in close proximity to the proposed Development. The assessment concluded that, in combination with these other windfarm developments, the proposed Development would not result in significant cumulative effects on the surrounding road network.

105. With the proposed mitigation measures in place, there are no residual effects on access, traffic and transport that are considered significant in the context of the EIA Regulations.

15 Land Use, Socio-economics and Recreation

106. This chapter considers potential changes to land use, socio-economics and recreational use of the site and surrounding area. The site is located in a rural area and is primarily private commercial forestry and moorland used for rough grazing.

107. During construction 13.7 hectares will be required, of which the operational footprint (permanent land-take) of the proposed Development is approximately 3.7 hectares. Approximately 37 hectares of woodland would also be felled to accommodate the proposed Development. The residual effects of this change in land use during construction are considered to be of low significance. During operational phase of the windfarm, the site will continue to be used for grazing and no significant effects are predicted. After decommissioning of the proposed Development the access tracks would remain.

108. Moor Farm is a vacant property owned by ScottishPower Renewables within the site boundary, and is no longer part of an agricultural unit. The change in land use as a result of its proposed demolition has been assessed as not significant.

109. The construction of the windfarm would result in beneficial effects for on site employment and service provision to the local and wider economy, though these would be short term and temporary. It is estimated that 30-60 short term construction jobs would be created. It is also likely that there will be some indirect economic benefits, which may include supply chain benefits for local businesses and sub-contracted work relating to the transportation of construction workers and materials. The existing operational staff at Whitelee Windfarm will be responsible for operating the proposed Development, however, some additional employment or extension of existing contracts may result from the maintenance of the additional infrastructure.

110. The East Ayrshire Council Local Plan 2010 also sets out requirements for the provision of a Renewable Energy Fund for successful windfarm applications, used to finance sustainable community environmental projects and there is therefore the potential for economic benefits to local communities during the lifetime of the windfarm.

111. Negligible adverse effects during construction have been identified in relation to informal recreation and access, which would be temporary and not significant. During operation it is anticipated that there would be minor beneficial effects due to the contribution of the proposed Development to improved accessibility and recreation.

112. There are there are no residual effects on land use, socio-economics or recreation that are considered significant in the context of the EIA Regulations.

16 Other Issues

113. A number of other issues associated with windfarm development were considered, including potential effects on telecommunication and television signals, aviation, shadow flicker, safety and air quality.

114. No significant disruption to telecommunications and television reception is anticipated as a result of the proposed Development, and no effects on aviation safety have been identified that cannot be mitigated by technical solutions.

115. Shadow flicker can arise from the moving shadow of the turbine rotor blade passing over a narrow opening such as the window of a nearby residence. However, the separation distance between nearby properties and the proposed turbine locations is sufficient that no shadow flicker effects would occur as a result of the proposed Development.

116. The proposed Development will be constructed and operated in accordance with relevant health and safety legislation including the Health and Safety at Work Act 1974. All site-based construction activities will be conducted in accordance with the Construction (Design and Management) Regulations 2007.

117. The risk to public safety from ice throw (ice building up on turbine blades and falling to the ground) is considered to be low. Appropriate measures are proposed in order to safeguard the safety of operations staff and members of the public.

118. The potential for adverse effects on local air quality during construction is considered to be minor, temporary and not significant. During operation, the proposed Development will contribute to a beneficial effect on local and global air quality, by avoiding emissions due to the generation of electricity by burning fossil fuels. A carbon assessment has been undertaken to estimate the potential savings in carbon dioxide (CO_2) emissions by the proposed Development replacing other electricity sources. This will positively contribute to meeting Scotland's targets for reducing greenhouse gas emissions.

17 Summary

119. Environmental constraints and considerations have been taken into account in the site layout and windfarm design. This has enabled potentially significant effects to be avoided. Further measures to prevent or reduce any remaining significant environmental effects are described within each environmental discipline chapter of the ES.

120. Mitigation measures as detailed in the ES have been identified to protect the environment prior to or during construction, during operation and decommissioning of the proposed Development.

121. The Construction Project Manager will oversee operations and ensure that mitigation measures are implemented and activities carried out in such a manner as to minimise or prevent effects on the environment. The Construction Project Manager will be supported by specialists such as an Ecological Clerk of Works or Archaeological Clerk of Works to ensure that the mitigation measures are implemented effectively.

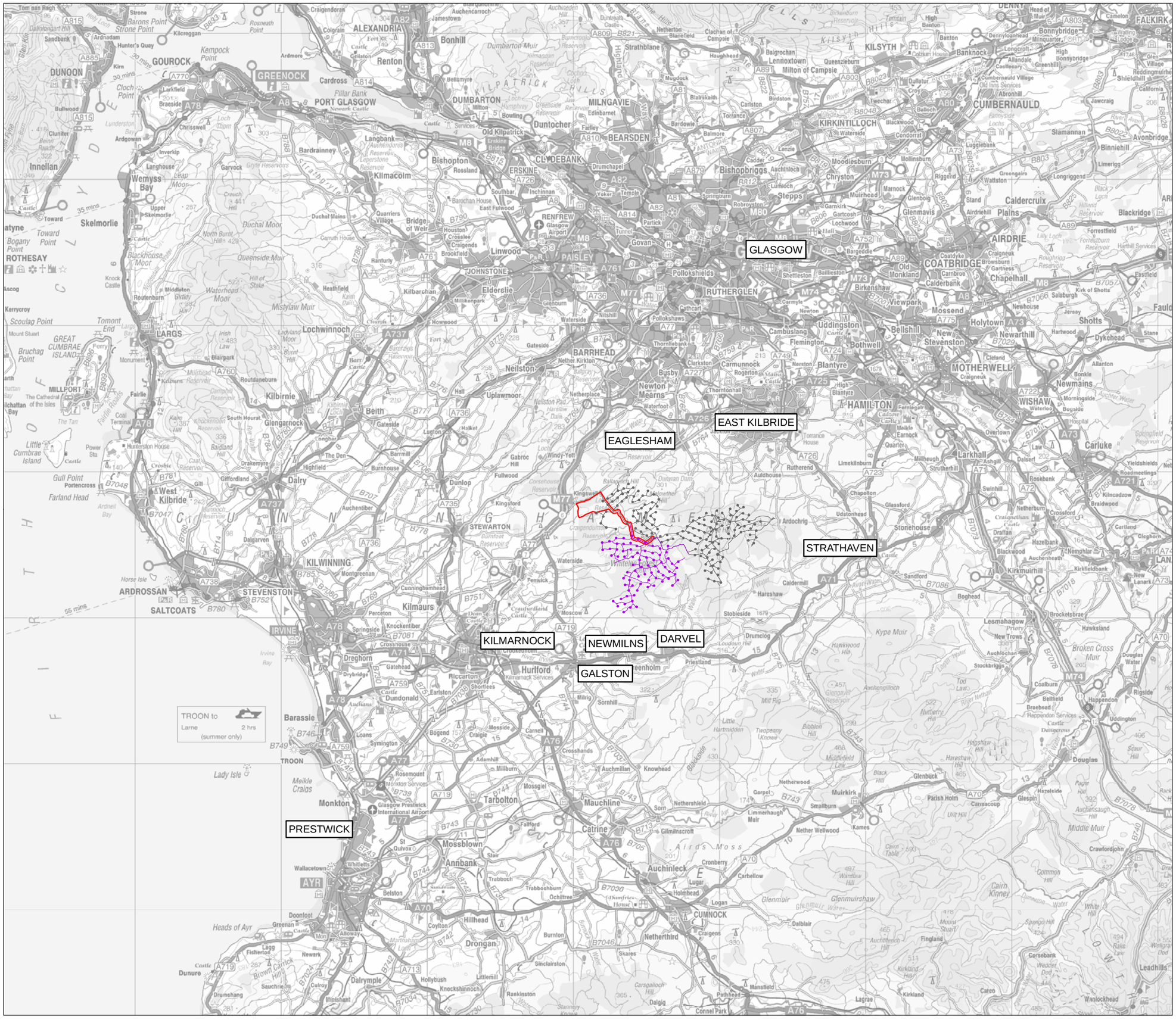
122. The proposed Development represents various design changes including a reduced number of turbines and reduced maximum tip height to address the key considerations raised on the previously proposed East Kingswell Windfarm planning application and appeal, with regard to local landscape and visual aspects and in particular potential effects on nearby residential receptors to the north and west of the proposed Development.

123. Provided that proposed mitigation measures are successfully implemented, it is not considered that residual effects related to any environmental disciplines are significant effects in the context of the EIA Regulations, with the exception of one potential cumulative effect as described below.

124. The landscape and visual effects of the proposed Development will be contained to a limited area and all of the landscape and visual receptors have been assessed as not significant, with the exception of the potential for a significant cumulative effect on Viewpoint 18 (Cauldstanes) if the proposed Development and the application stage Harelaw Renewable Energy Park and Moorhouse Farmers Windfarms were to be consented and built. Although the identified effects are long term (subsisting for the life of the windfarm) these are reversible, such that following decommissioning these effects will cease to exist.

125. The proposed Development would represent an important environmental benefit in that it involves the generation of electricity from a renewable energy source that will reduce or avoid the use of fossil fuels through the contribution of electricity generated from other sources of energy. Burning fossil fuels produces carbon dioxide which contributes to global warming. The proposed Development has a payback time of between 1.5 and 3.1 years, which is substantially shorter time than the 25 year operation period. The proposed Development will also lead to minor beneficial effects in relation to its employment creation during construction and positive effects in relation to increased access and recreation opportunities during its operation.

This page is intentionally blank



SCOTTISHPOWER RENEWABLES

JACOBS

Key

Whitelee Windfarm Extension Phase 3 Features

- Application boundary

Existing / Under Construction Features

- Existing Whitelee Windfarm turbines
- Existing Whitelee Windfarm access tracks
- Whitelee Extension (under construction) turbines
- Whitelee Extension (under construction) access tracks

Scale: 1:250,000 @ A3

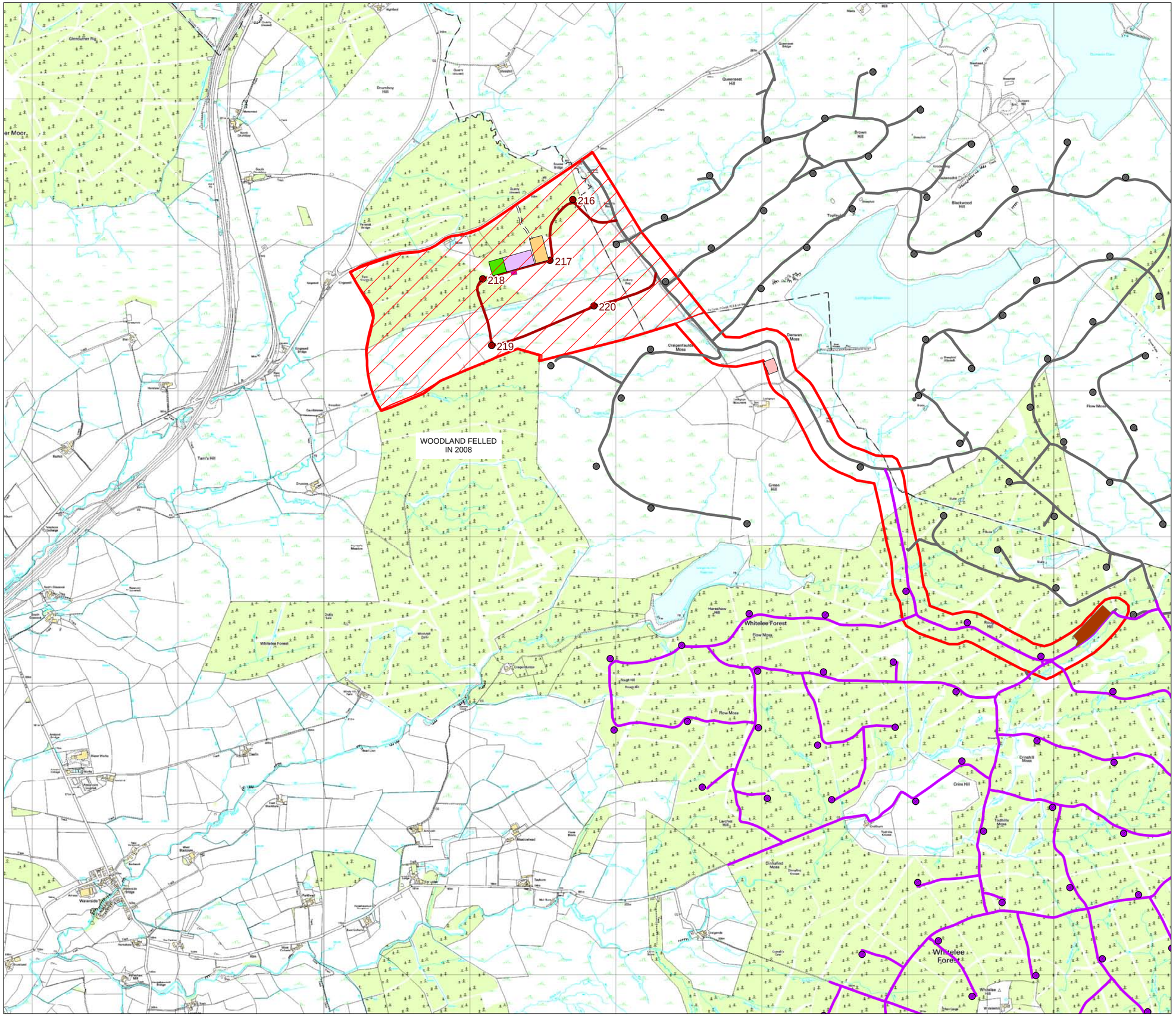
0 2.5 5 10 Km

N

Status	Date	Dr.	Ch.	App.
FINAL	July 2012	SHF	RMc	MP

Site Location
Figure 1

Whitelee Windfarm Extension Phase 3



SCOTTISHPOWER RENEWABLES

JACOBS

Key

Whitelee Windfarm Extension Phase 3 Features

- Application boundary
- Development area
- Whitelee Windfarm Extension Phase 3 proposed turbines
- Whitelee Windfarm Extension Phase 3 proposed access tracks
- Construction compound
- Indicative substation compound

Indicative Borrow Pit Area

- Borrow pit
- Storage area

Existing / Under Construction Features

- Existing Whitelee Windfarm turbines
- Existing Whitelee Windfarm access tracks
- Existing Whitelee control room compound
- Whitelee Extension (under construction) turbines
- Whitelee Extension (under construction) access tracks
- Whitelee Extension compound and substation
- Existing forestry access track

Proposed Turbines
(Turbine reference numbers are continued from Whitelee Extension)

216	251704 , 648313
217	251548 , 647897
218	251087 , 647770
219	251149 , 647314
220	251849 , 647585

Scale: 1:25,000 @ A3

0 0.25 0.5 1 Km

N

Status	Date	Dr.	Ch.	App.
FINAL	July 2012	SHF	RMc	MP

Site Layout
Figure 2

Whitelee Windfarm Extension Phase 3