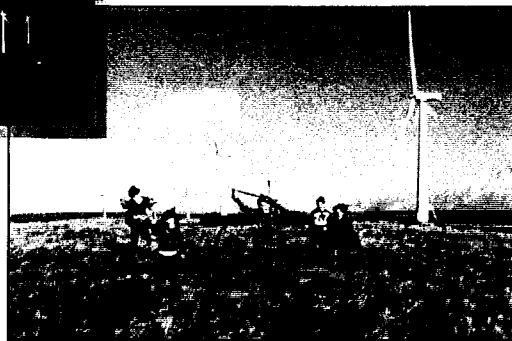
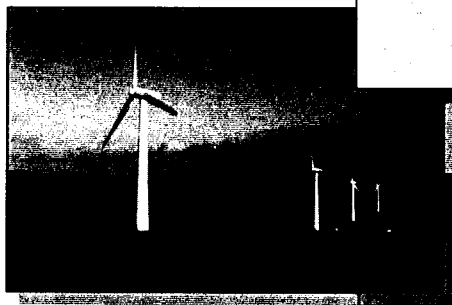
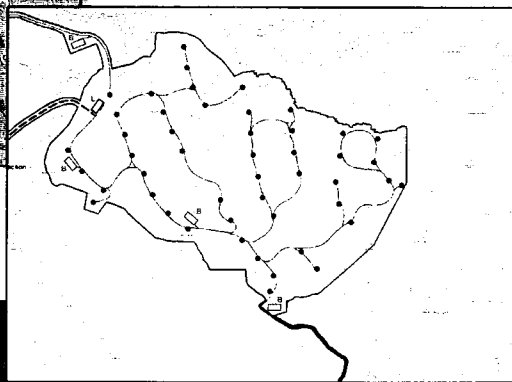
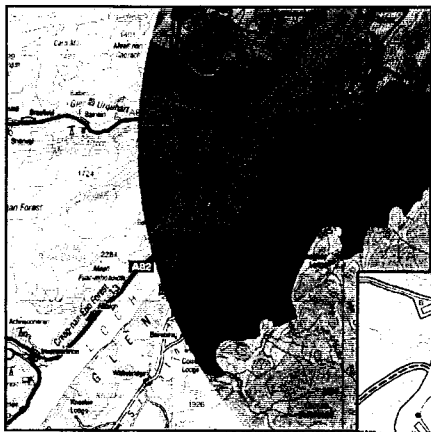


NATIONAL WIND POWER

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# FARR WIND FARM

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Environmental Statement  
Volume 1  
**Non-Technical Summary**  
September 2002



**Farr Wind Farm**  
**Environmental Statement**

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IN0780009a

Volume 1 of 4

September 2002

**Final**

National Wind Power  
Riverside House,  
Meadowbank,  
Furlong Road,  
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Buckinghamshire,  
SL8 5AJ



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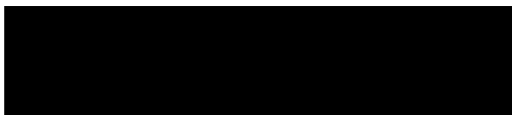


**Lindsey Guthrie – Project Manager**

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**Directed, reviewed and approved by:**

*Signature*



**Pat Alexander – Project Director**

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## INTRODUCTION

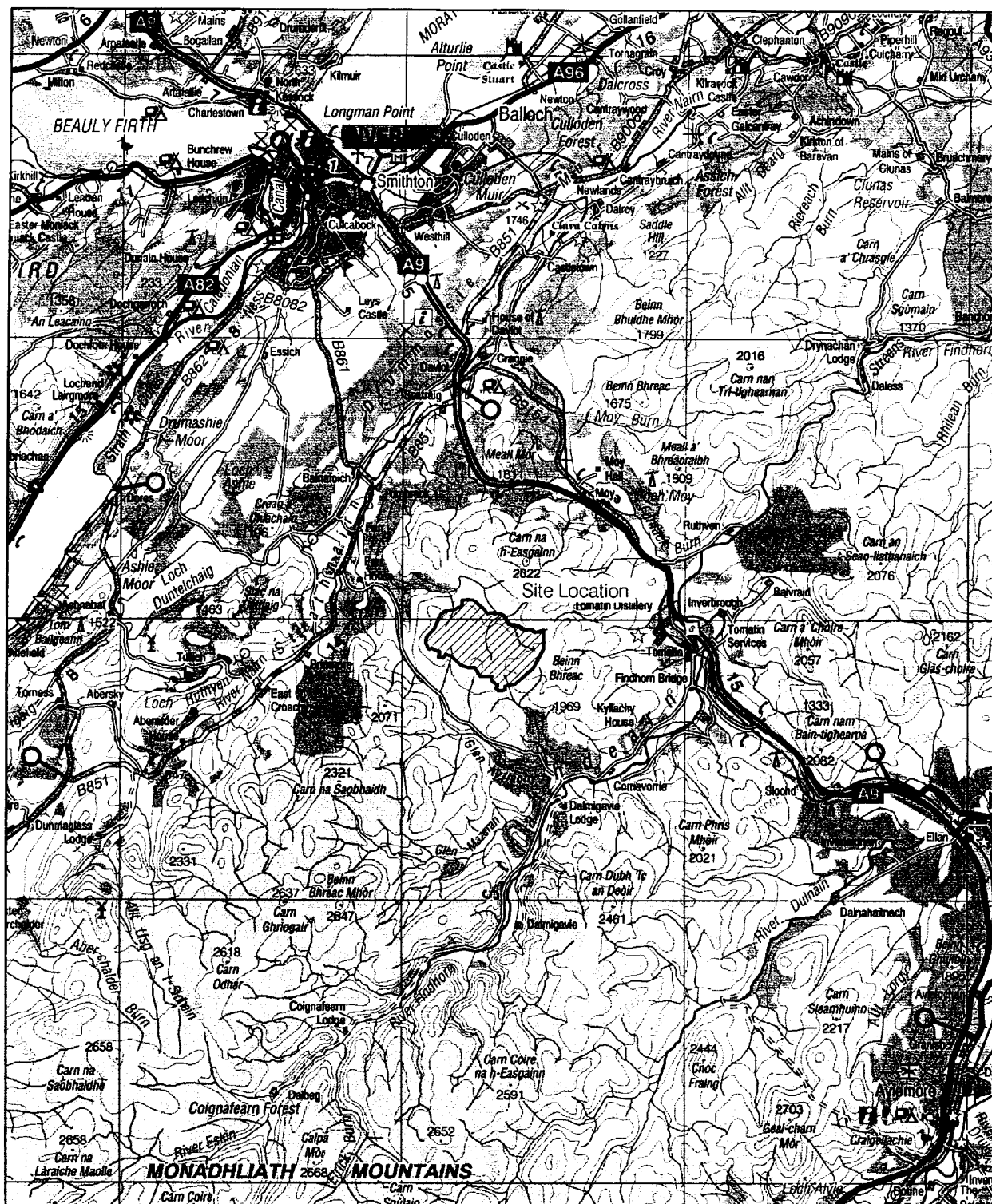
1. This Non Technical Summary forms part of a Section 36 Environmental Statement concerning the proposal by National Wind Power Limited (NWP) to construct and operate up to 45 wind turbine generators, each of 2.0 to 2.5 megawatts (MW) rated power output, at Glen Kyllachy Estate, near Tomatin, Inverness-shire. The location of the site is shown overleaf and in Figures 1 and 2 (Volume 3).
2. The project is expected to meet, on average, the electricity needs of 60,000 homes and will contribute to international, national and regional objectives including the Scottish Climate Change Programme. The project will offset approximately 200,000 tonnes of CO<sub>2</sub> from equivalent fossil fuel electricity generation.
3. The application is made by NWP, a subsidiary of Innogy which is an integrated energy business and formerly part of National Power plc. By early 2002 NWP had developed 12 wind farms in the UK.
4. The Environmental Statement has been prepared in accordance with the Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2000. It describes the wind turbine development itself, the nature of the site and its surroundings, the potential effects of the development on the local environment and the measures proposed to mitigate any adverse effects.
5. This Non Technical Summary (Volume 1) is accompanied by the Written Statement (Volume 2), the Volume of Figures (Volume 3) and Technical Appendices (Volume 4).

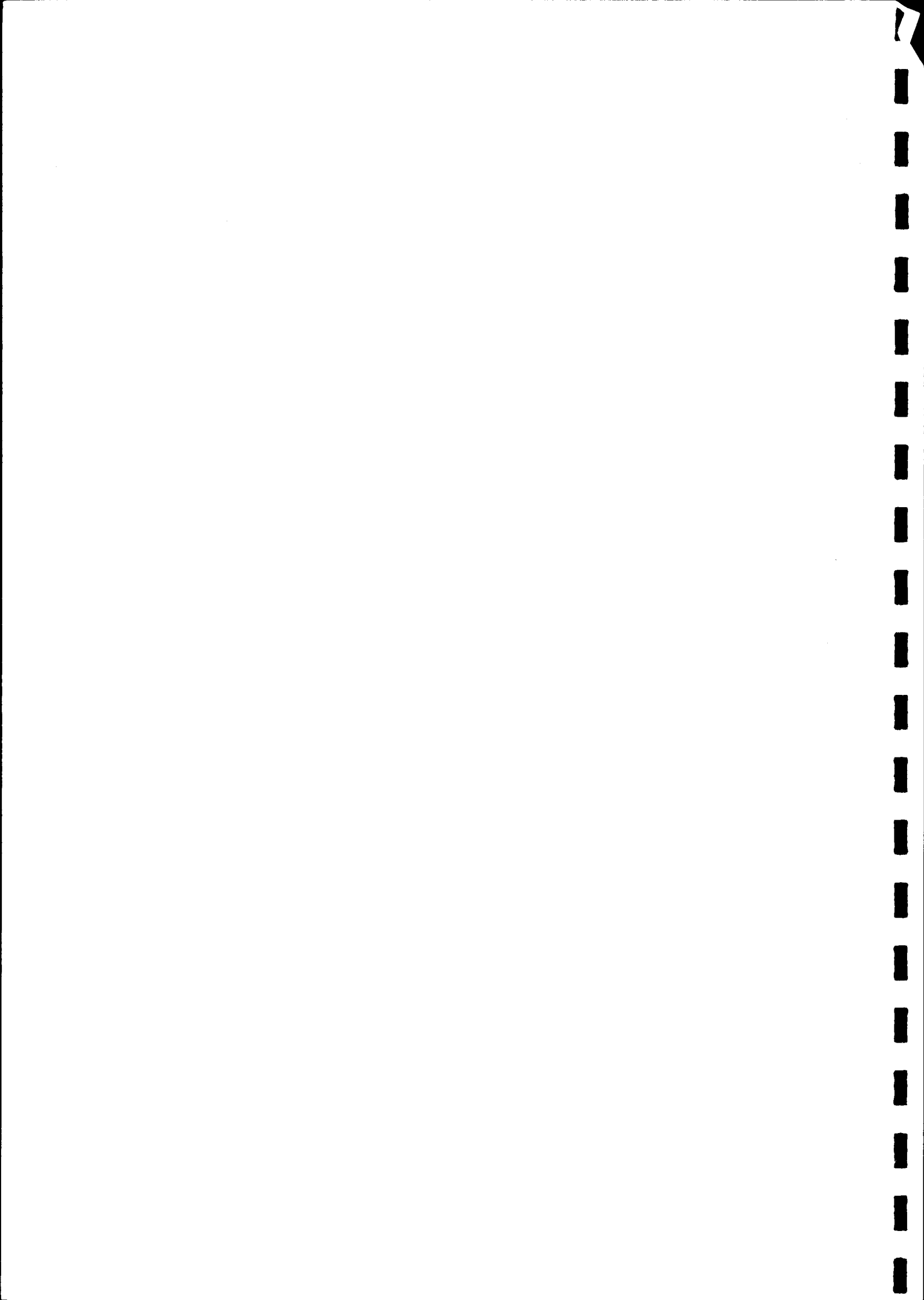




Figure 1: Site Location Plan

(Scale reduced from 1:50,000)





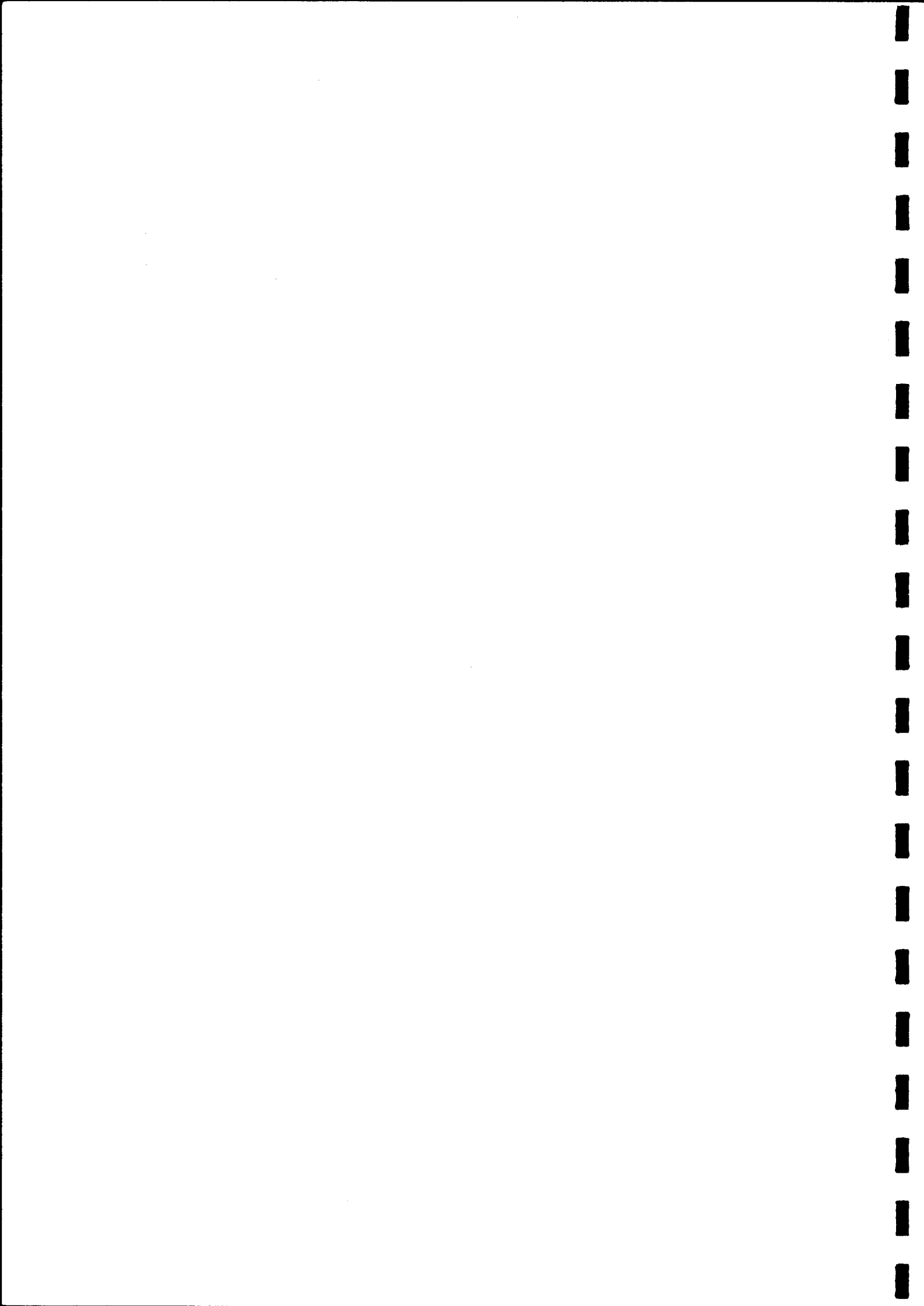
## THE PROPOSED DEVELOPMENT

### Site Selection

6. The proposed Farr Wind Farm site at Glen Kyllachy Estate, Tomatin, Inverness-shire has been chosen because it has suitable wind characteristics, good access and grid infrastructure and it does not fall within any area of national environmental importance. The site also has the following attributes:
- The land is currently used for rough grazing which could continue during the operation of the wind farm;
  - The site is reasonably distant from habitation allowing the potential noise effects on residential properties to be minimised;
  - Access to the site is good;
  - The main areas of settlement in the surrounding area will not have visibility of the proposed wind farm; and
  - The nearby grid connection avoids the need for overhead power lines.
7. The layout and individual siting of turbines have been considered as part of the iterative design process to take account of ecological, archaeological, noise as well as landscape and visual amenity considerations, and layouts for interim stages of this process are illustrated in Appendix A, Volume 4 of the ES. The proposed layout shown on Figure 3, Volume 3 of the ES represents the preferred design in terms of technical, economic and environmental constraints.

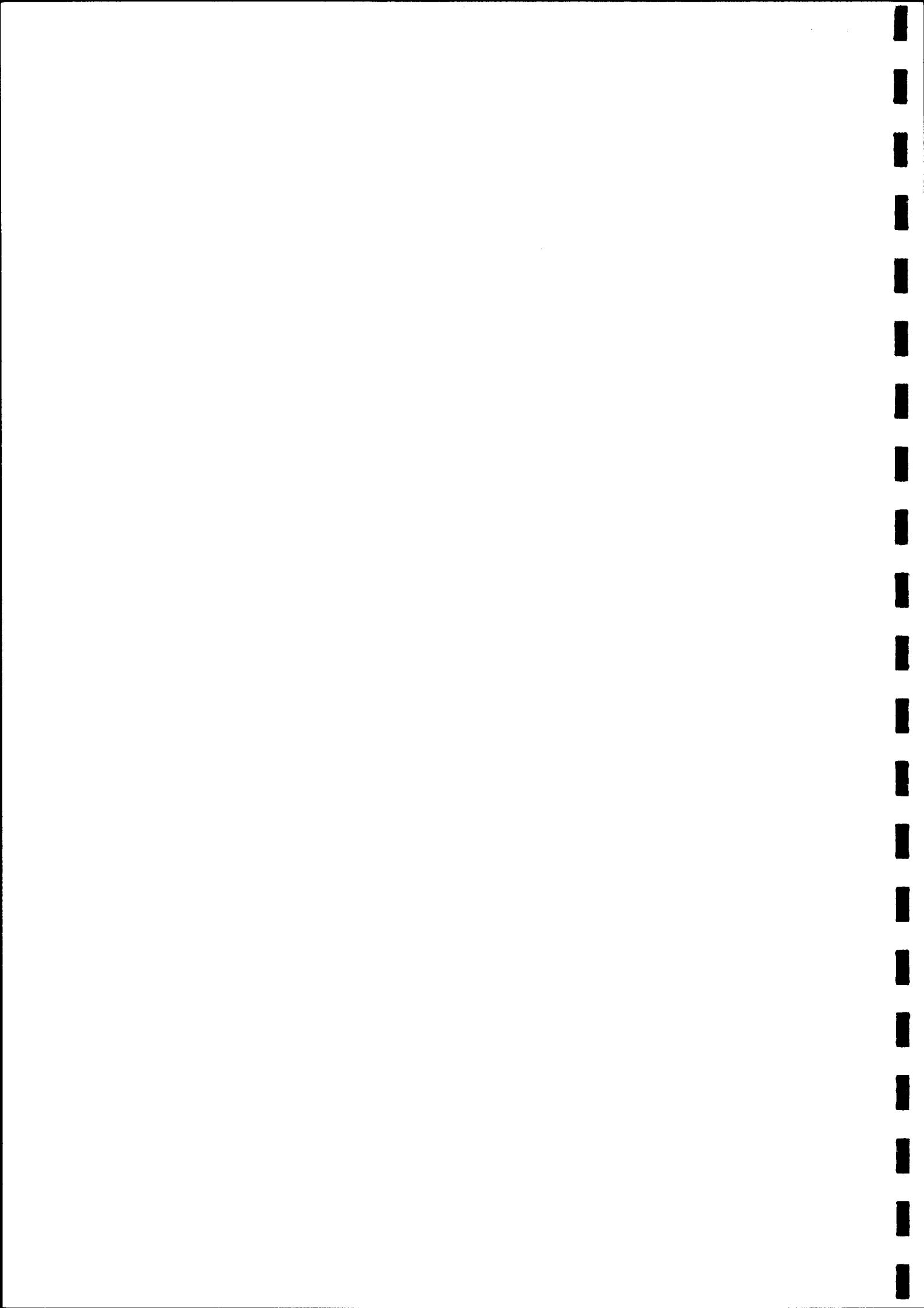
### Site Location

8. The site of the proposed development is situated off the A9 approximately 16 km south west of Inverness and 20 km north west of Aviemore (Figure 1). It is located on the eastern fringes of the Monadhliath Mountains, between Strathnairn, to the north and to the west of the site and Strathdearn to the south and east.
9. The landholding within which the wind farm is proposed lies on open moorland with some isolated hills to the south and west, and more continuous high ground of the Monadhliath Mountains occurring to the west of the site.



## General Description

10. The proposed wind farm will comprise up to 45 wind turbines, three anemometer masts, a grid connection compound, site control building, access tracks and underground electrical cabling as required.
11. The proposed location of turbines has been influenced by a number of factors, including ecological, archaeological, noise and construction constraints. The layout has also been optimised to reduce the visual impact of the wind farm as far as possible.
12. The turbines, each of which will have a capacity of 2 to 2.5 MW, will be mounted on towers at 60 metres (m) above ground level. The length of the turbine blades will be approximately 42m, resulting in a total height, when a blade is in the upper vertical position, of 102m.
13. The concrete foundations for each turbine tower will be approximately 16m in diameter and up to 4m deep. Natural vegetation will be reinstated over the foundations, except for a 1m gravel path around the base of each tower.
14. There will also be three 80m high anemometer masts installed on the site. These lattice tower masts will require a concrete foundation 6m x 6m and 2m in depth.
15. The main site access will be from the A9 Trunk road using an existing forestry access point at Aultnaslanach, near Moy. The site access would follow the existing forestry access track and would then cross the Uisghe Dubh watercourse on a new single span bridge, before turning eastwards to the main site. Approximately 15 km of new and upgraded track would be required to gain access to the site and approximately 18 km of new on-site access track to connect the wind turbines. A detailed construction method together with associated reinstatement proposals would be submitted to The Highland Council and SNH for approval on completion of further geotechnical surveys to be carried out at the commencement of the development.
16. A grid connection compound 60m x 60m will be required on site where the wind farm will be connected to the National Grid. The compound will comply with Electricity Supply Regulations 1988 and will have a boundary fence of not less than 2.4m in height to prevent unauthorised access. Adjacent to the compound there will be a grid connection building (12m x 5m x 5m height) to house the 33kV circuit boards and protection equipment.
17. The site control building will incorporate: control and metering facilities; telecommunication equipment; an office; an ATV garage and a store. The building will be 20m by 10m with the pitched roof being a maximum of 6m high. A mess and toilet facilities will be provided at the site control building in addition to vehicular access. There will be no exterior lighting.



18. Site cables will be buried underground, generally alongside the on-site access tracks. The tracks themselves will be positioned to avoid disturbance to sensitive ecological and archaeological features, and as far as possible to minimise effects on watercourses and deep areas of peat. Existing tracks will be used wherever possible.
19. During the construction period, compounds and a lay down area will be required. The main construction compound will be approximately 100m x 50m and located adjacent to the Farr-Garbole road (known as the Garbole Road) in the vicinity of the site control building. It will include a portacabin, to be removed after construction, parking, secure storage and a receiving area for incoming vehicles. The compound and lay down area will be reinstated at the end of the construction period.

### **Construction Activities**

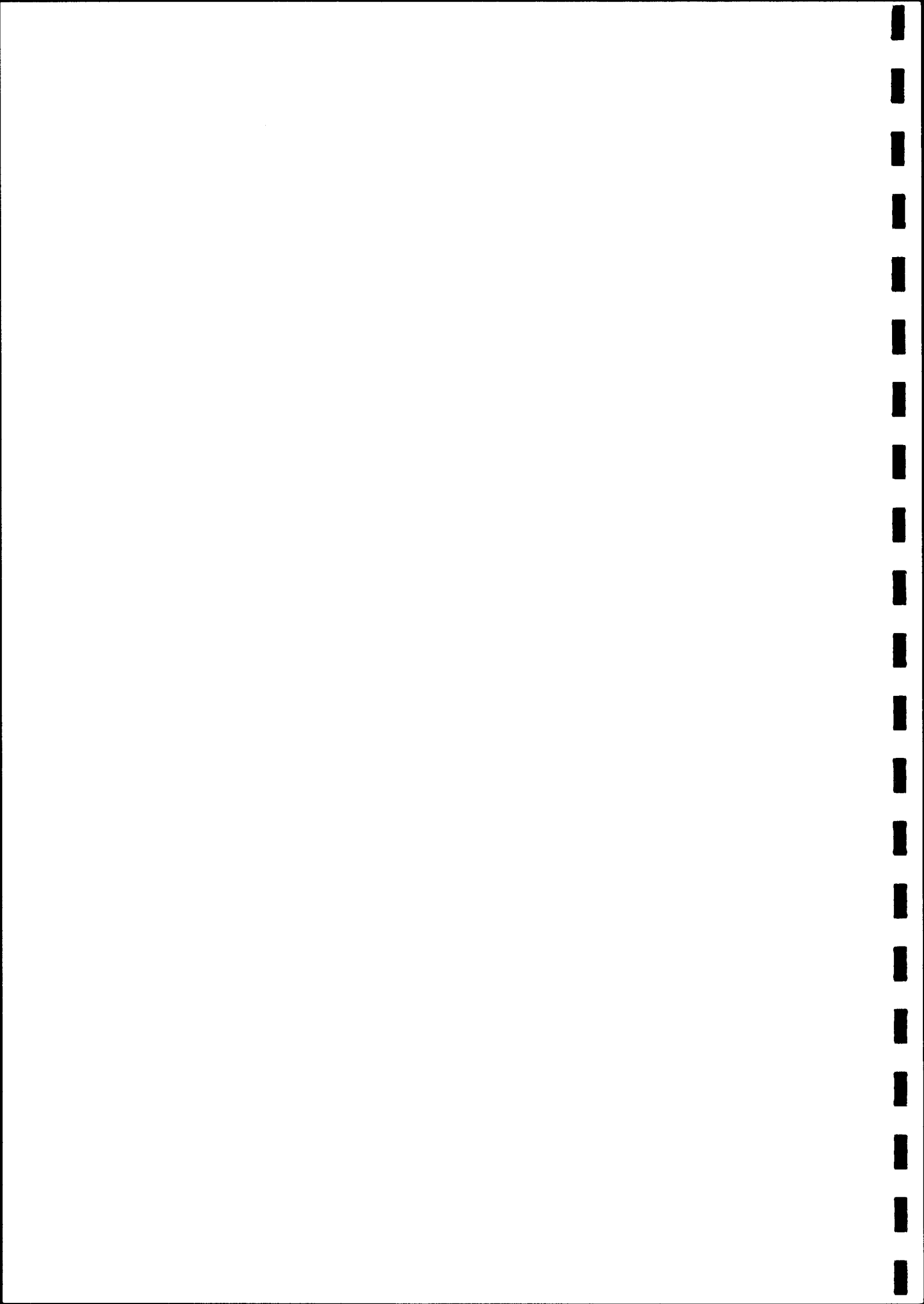
20. The construction phase is expected to last up to 30 months, with most of the work being carried out between the months of March and November to avoid working during the winter months.
21. It is anticipated that there will be approximately 12 - 18 lorry visits per day during the construction period. Vehicular access during construction will utilise the A9 trunk road and the northern access route through the forest to the north of the site. Transport of turbine components will be scheduled, where practical, to minimise disturbance to road traffic.
22. During construction and site reinstatement, the site will be worked under the watching brief of an ecologist and an archaeologist.

### **Operational Requirements**

23. Once operational, the wind farm will employ between 4 and 6 staff. The wind turbines will operate automatically requiring visits to the site by operations staff in four wheel drive vehicles approximately once or twice a week for scheduled services. Longer visits for servicing, typically every six months, and unscheduled maintenance will also be required. Wind farm performance will be monitored remotely.

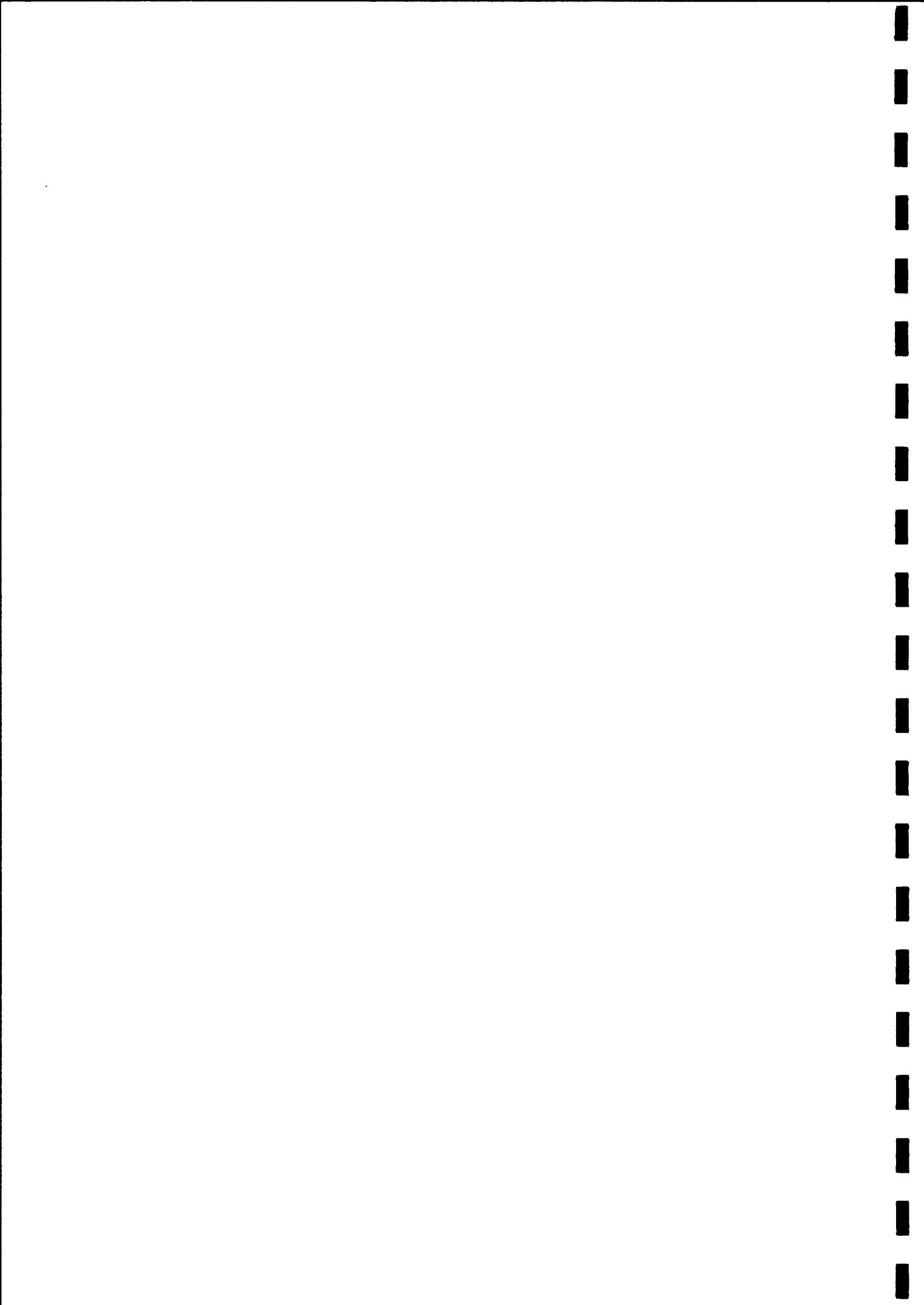
### **Decommissioning**

24. The anticipated operational life of the wind turbines is approximately 20-25 years. At the end of this period the turbines will be dismantled and most above ground structures will be removed. Underground cabling and turbine foundations will be left *in situ*, as will site access tracks. Where applicable, foundations and cabling will be removed to an appropriate depth





and reinstated to allow continuation of current landuse activities. Areas of hardstanding will be reinstated in consultation with a site ecologist and The Highland Council.

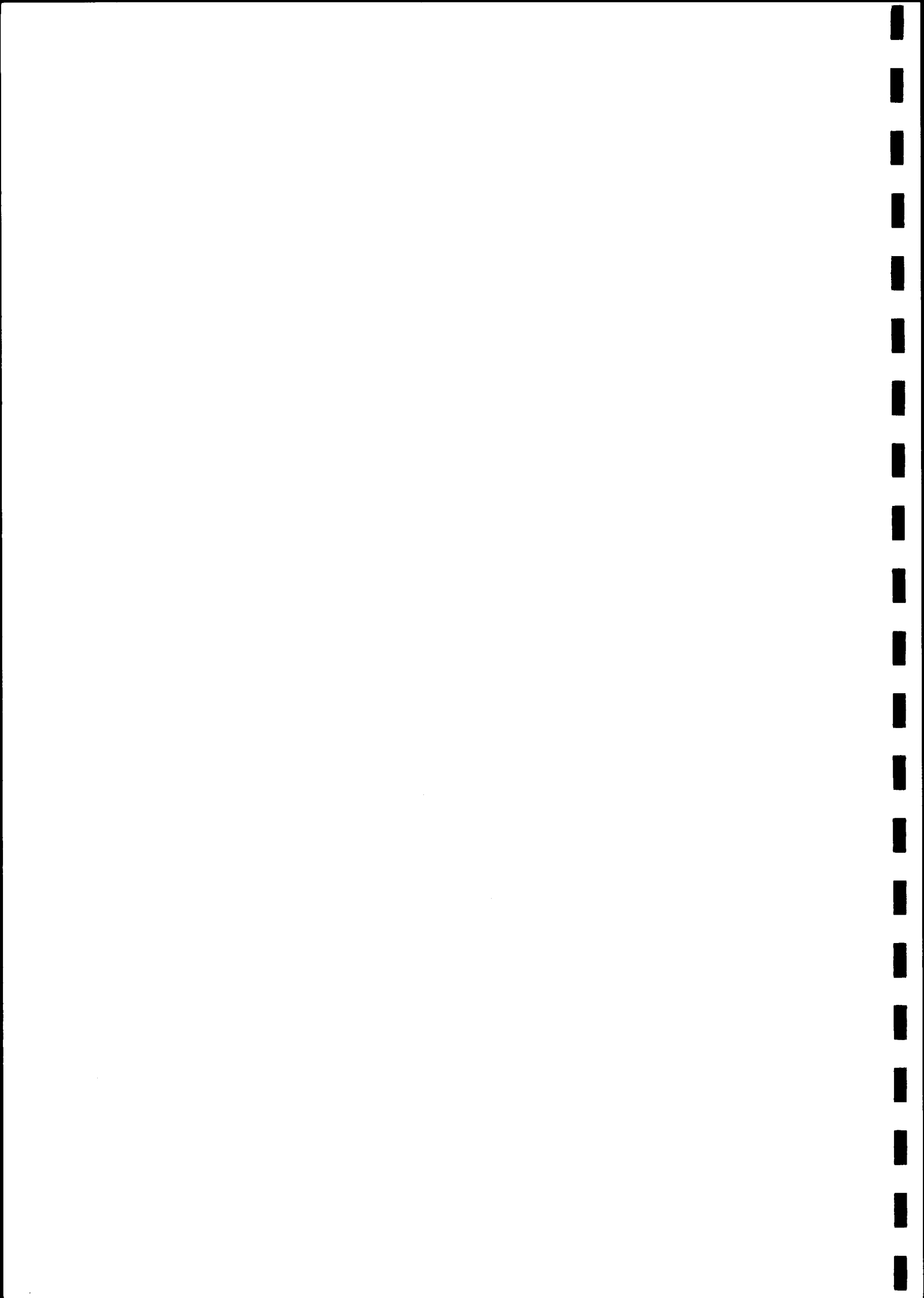


## PLANNING STATUS

25. The proposed wind farm will contribute to the UK policy and the more recent European Directive (2001) on renewable energy, requiring that 10% and 22.1% respectively of electricity be generated from renewable energy sources by 2010. The Scottish Executive has set a target of 18% by 2010 and is currently consulting on a target of 40% by 2020.
26. The proposed development lies within the eastern 'Potential Area for Wind Farms', as identified within the Inverness Local Plan (Consultative Draft 2001). The site also lies within the 'Rural Development Area' where *'longstanding and acute unemployment, arising notably from retrenchment in traditional forestry, hydro electric and estate activities, must be addressed. Development of **renewable energy**, specialist minerals, eco tourism based on rural conservation could offer job opportunities for local people.'*
27. The site lies within an area which has been identified under General Policy PP3 where *'The Council will presume against development unless there is an overriding social, economic, public health or safety reason, or benefits of primary importance to the environment.'* It is assumed that the objectives of the 'Potential Area for Wind Farm' development override this policy.
28. The Farr wind farm proposal is considered to be consistent with planning guidance and policy at national, regional and local levels.

### Policy summary

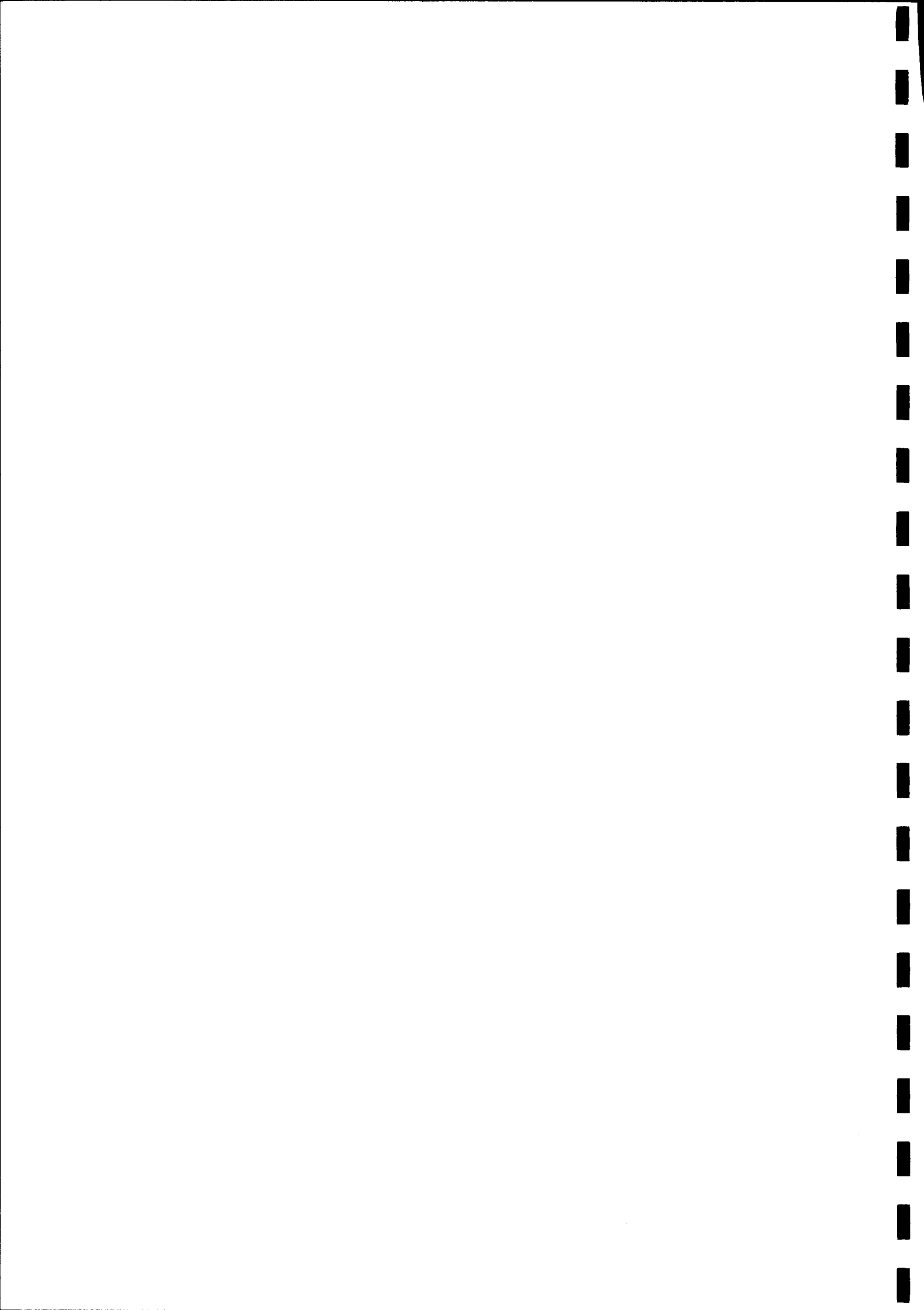
29. The development of a wind farm at Farr is consistent with:
- European policy for the deployment of renewable energy technologies;
  - National policy promoting an expansion in the use of renewable energy;
  - The Scottish Climate Change Programme's objective of reducing CO<sub>2</sub> emissions;
  - The Highland Structure Plan's objectives to optimise the use of renewable energy sources;
  - The Highland Council's 'Potential Areas for Wind Farm' developments;
  - The Inverness Local Plan's objectives of providing local employment through renewable energy developments; and
  - The Scottish Executive's objectives of promoting Rural Development.



## ENVIRONMENTAL EFFECTS

### Landscape and visual assessment

30. The landscape and visual assessment of the proposed wind farm has been carried out over a study area of 25 km radius from the centre of the application site. The viewpoint assessment has been carried out for 16 viewpoint locations selected in consultation with The Highland Council and SNH. The two aspects of the development which have the potential to cause an effect on landscape quality and visual amenity are: activities and elements of the development that will affect the fabric of the physical landscape of the site, and activities and characteristics of the development that will be visible from the surrounding area, and therefore affect the landscape and visual amenity.
31. The proposed wind farm is located towards the eastern edge of the Rolling Uplands landscape character type, adjacent to the Farmed Straths landscape, at the transition between the extensive open hills of the Monadhliath to the west and the settled straths of Strathnairn and Strathdearn. There are no villages within 4 km of the site with only sparse settlement in the straths. Although the site and its immediate surrounds have some sense of remoteness, extensive coniferous forestry and muirburn management of the sporting estates, as well as the existing communications links which occur close to the site, contribute to a working landscape.
32. The site and its immediate surroundings do not occur within a designated landscape. The Cairngorms National Scenic Area is approximately 21.5 km to the south east of the site and the proposed boundary of the Cairngorms National Park at its closest, is approximately 8 km to the south east of the proposed wind farm site.
33. The proposed development would change the landscape and visual baseline conditions during construction and operational phases. The direct effects on landscape fabric are not considered to be significant, because they will affect a small proportion of the application site and most will be reversible at the end of the operational phase of the development.
34. Significant landscape and visual amenity effects will be confined to within approximately 6 km of the application site, occurring on the Garbole Road to the west of the site and in parts of Strathnairn and Strathdearn. Visibility of the proposed development is relatively contained by the topography of the surrounding area, which limits views from the main transport route corridor of the A9 and railway to the east of the site, as well as related settlements.
35. There will not be any significant effects on landscape or visual amenity of the more distant Munros in the Cairngorms, or on the high ground to the north of Loch Ness.



36. Cumulative landscape and visual effects have been examined in relation to the existing wind farm at Novar which is located at 43 km to the north north west of the proposed Farr Wind Farm, and the proposed wind farm at Dunmaglass which would be located approximately 12 km to the south west of the site. Of the 8 viewpoint locations where potential cumulative effects may occur, it is considered that significant effects may occur at Viewpoint 16, Carn Sgulain, largely attributable to the proximity of the proposed wind farm at Dunmaglass and the fact that both wind farms would be seen in the context of the more open, remote character of the Monadhliath Mountains.
37. Having carefully examined the potential effects on landscape and visual amenity associated with the proposed wind farm, it is considered that the proposals are acceptable in this location. The assessment of the impacts of the proposed development on landscape and visual amenity is summarised in the following table.

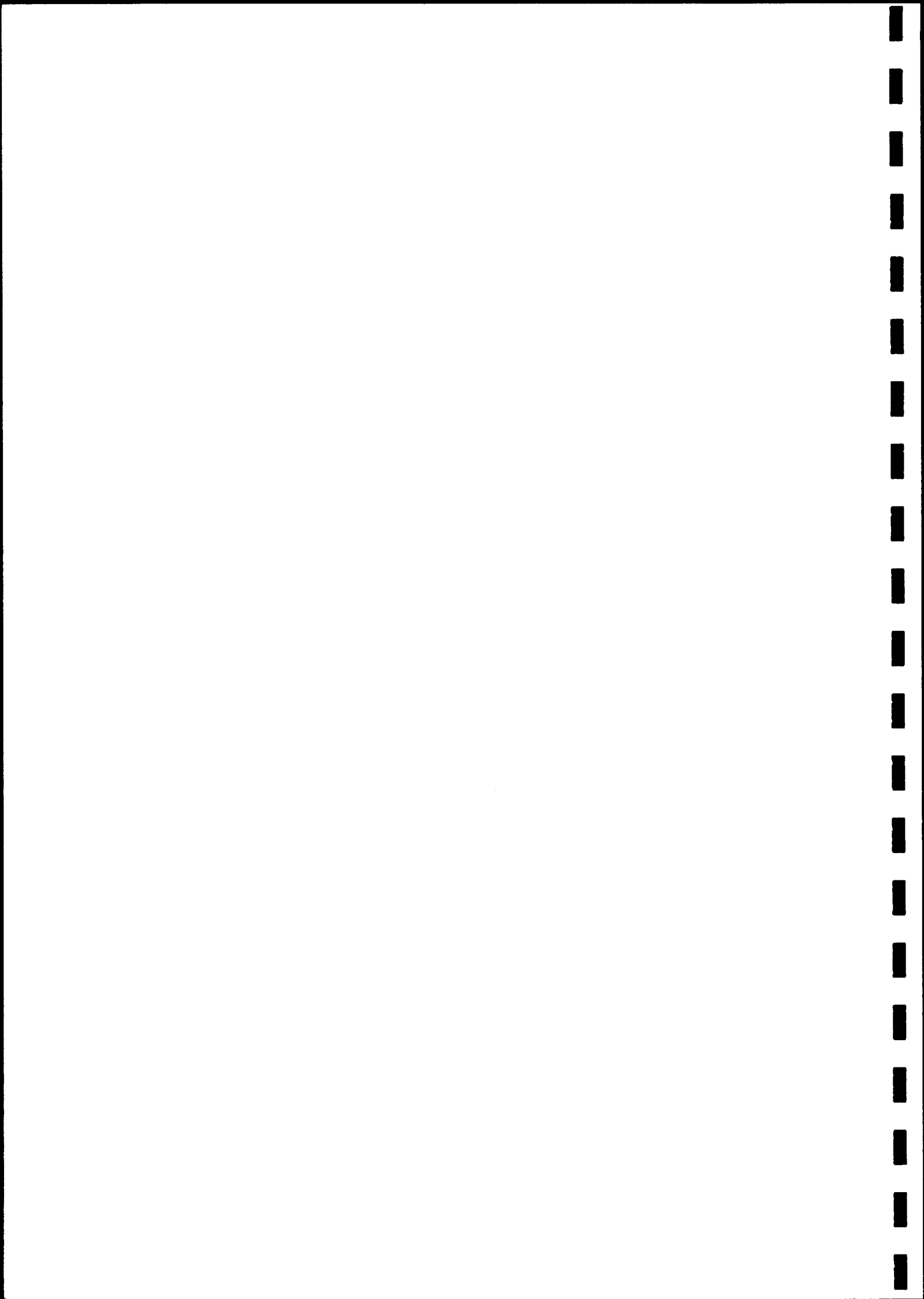
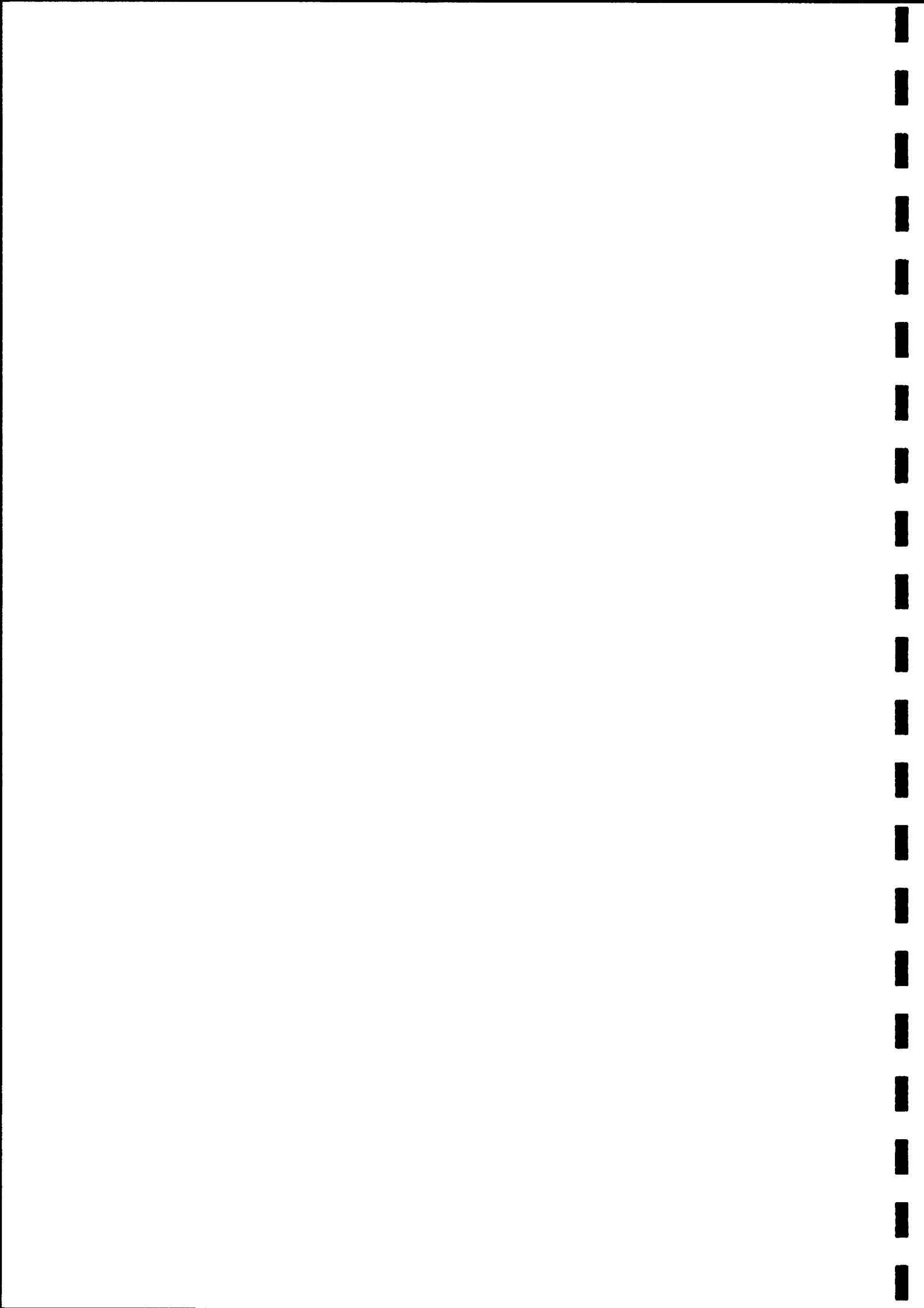




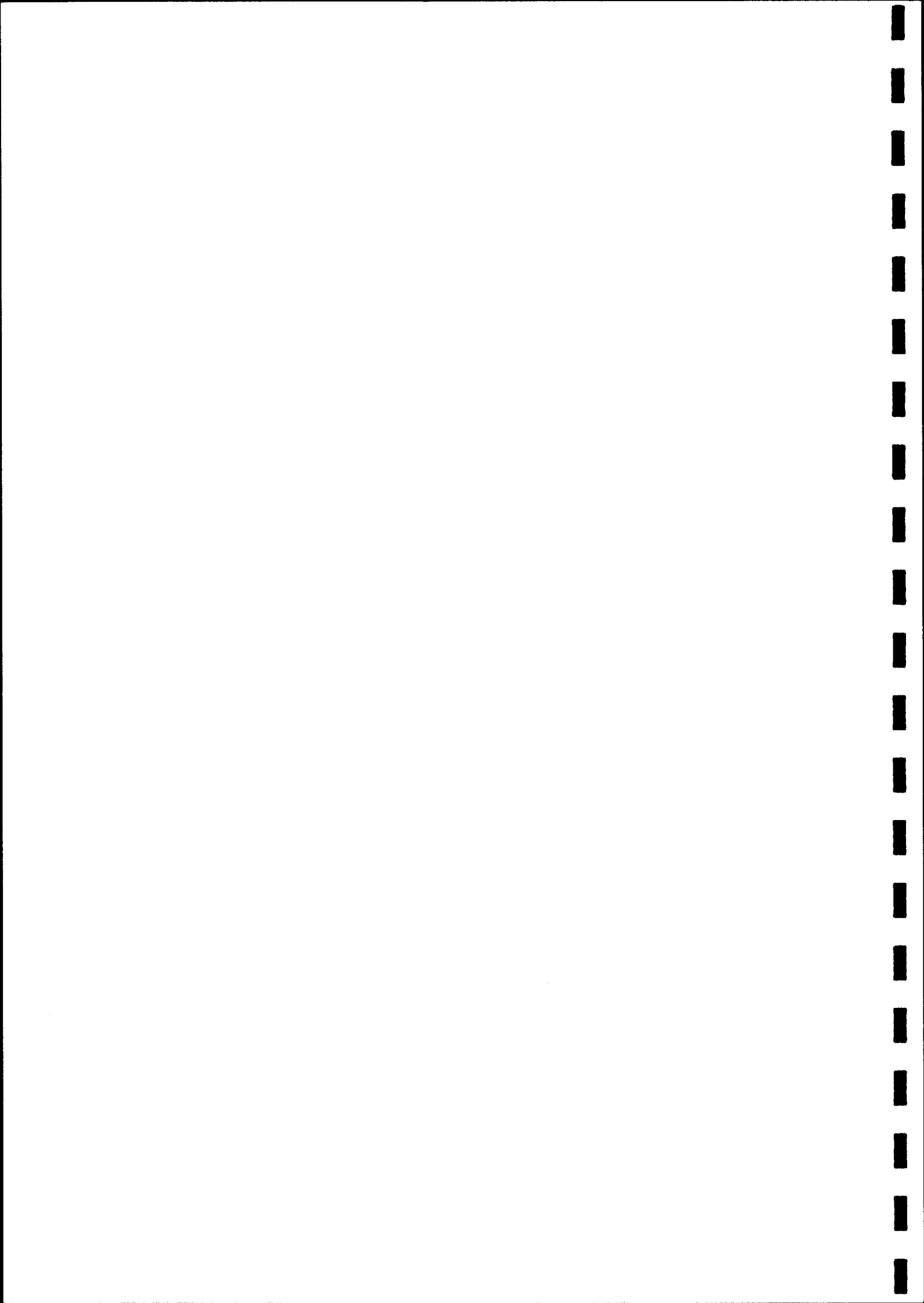
Table 1 : Landscape and Visual Impacts

Activity	Potential Impact	Significance	Mitigation Measures
Construction and operation of wind turbines, access roads and ancillary services	Impacts on the landscape fabric of the application site	Minor	Ground disturbance limited to a small proportion of the application site  Use of existing access off the A9 and existing forest access tracks where possible  Re-instatement of any ground disturbance after end of construction phase
	Impacts on the landscape character and quality of the study area	Potentially significant on parts of the Rolling Uplands and Farmed and Wooded Foothills  Elsewhere not significant	Design iteration has taken place and layout optimised in terms of visual and landscape considerations  Site selected is in an appropriate area of expansive moorland which is exposed an  Wind farm designed to relate to the landform of the site
	Impacts on the visual amenity of the study area	Potentially significant limited to within 6.1 km of the application site  Elsewhere not significant	Modern turbine design with three bladed horizontal axis turbines with tubular steel towers  Turbines will be painted in a semi-matt pale grey colour  Design iteration has taken place and layout optimised in terms of visual considerations  Site located in an area where there are few receptors and sparse scattered settlement
	Cumulative landscape and visual impacts	Potentially significant in conjunction with the proposed Dunmaglass wind farm at one location	



## Ecology

38. Baseline surveys of habitats have been completed within the area proposed for the Farr Wind Farm development. Field data on habitats was collected in May - August 2002. Surveys for otter and water vole are ongoing, and reports on these will be submitted in October 2002.
39. Blanket bog vegetation is the dominant habitat type covering 88% of the 1008 ha surveyed. Dry heath (6%), wet heath (2%), flush (2%) and bare peat are locally common. These types are typical of upland areas in the Highlands. The condition of much blanket peat and heath is poor due principally to drainage and erosion. Burning and grazing impacts by Red deer and sheep are less severe, although grazing pressure is quite high over much of the site.
40. The ground surveyed is not a designated site. Habitat information for the site has been compared with guidelines and other documentation for estimating the level of ecological interest. The site contains no ground which might be worthy of international or national designation. It has large extents of blanket bog which are of district interest and important as a European Priority Habitat, as well as a number of other habitat types which are also of district interest.
41. Development infrastructure (access tracks, wind turbines, substation and cable trenches) will result in the loss of about 29 ha of habitat overall. This habitat loss has been assessed to have a moderate to negligible effect depending upon the habitat affected. In addition, approximately 27 ha of habitat will be disturbed and subject to rapid restoration.
42. While surveys for otter and water vole are ongoing, it is not anticipated that the development of the wind farm will have significant impact on these species.
43. Mitigation was applied to the design process at an early stage. Access track routes within the wind farm site were changed to avoid crossing major flushes and one borrow pit was moved outside the site to eliminate the risk of reducing drainage to an area of wet blanket bog. Prior to the construction phase, method statements will be developed for access track construction and rapid batter restoration. Turbine positions will be placed using micro-siting to avoid any local sensitive habitats such as flushes.
44. Most of the 29 ha of habitat lost in the construction phase will be compensated for by creating wet blanket bog within a peatland restoration scheme. The restoration scheme will use waste peat generated during development and is proposed for dissected peatland areas to the west of the wind farm site.
45. The only residual effects will be minor losses of wet heath and dry heath vegetation, much of which will occur outside the wind farm site in access corridors. Overall, such residual effects are of minor negative significance.



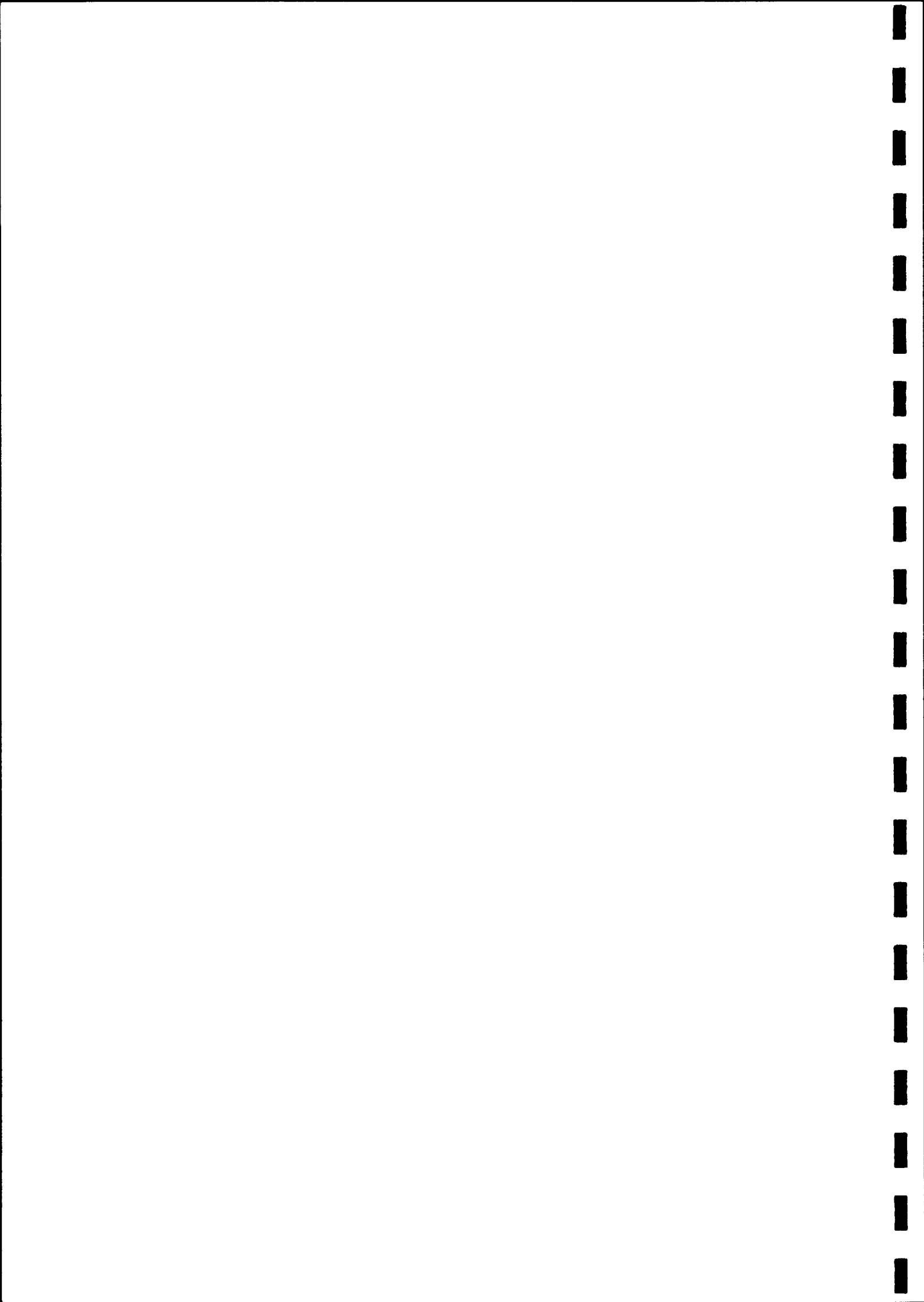
46. It may require up to ten years for good semi-natural vegetation to develop in the restored peatland area. The establishment of semi-natural vegetation should be regarded as of moderate positive ecological significance.
47. The assessment of the impacts of the proposed development on ecology is summarised in the following table.

**Table 2 : Ecological Habitat Impacts**

Activity	Potential Impact	Significance	Mitigation Measures
Construction of access roads, turbine bases	Habitat Loss	Potentially significant	Avoid construction activities outside identified site working areas
Peat excavation	Habitat Loss	Potentially significant	Perform off-site disposal, store locally and use for reinstatement in peatland restoration scheme
Construction and operation of turbines	No further impact		

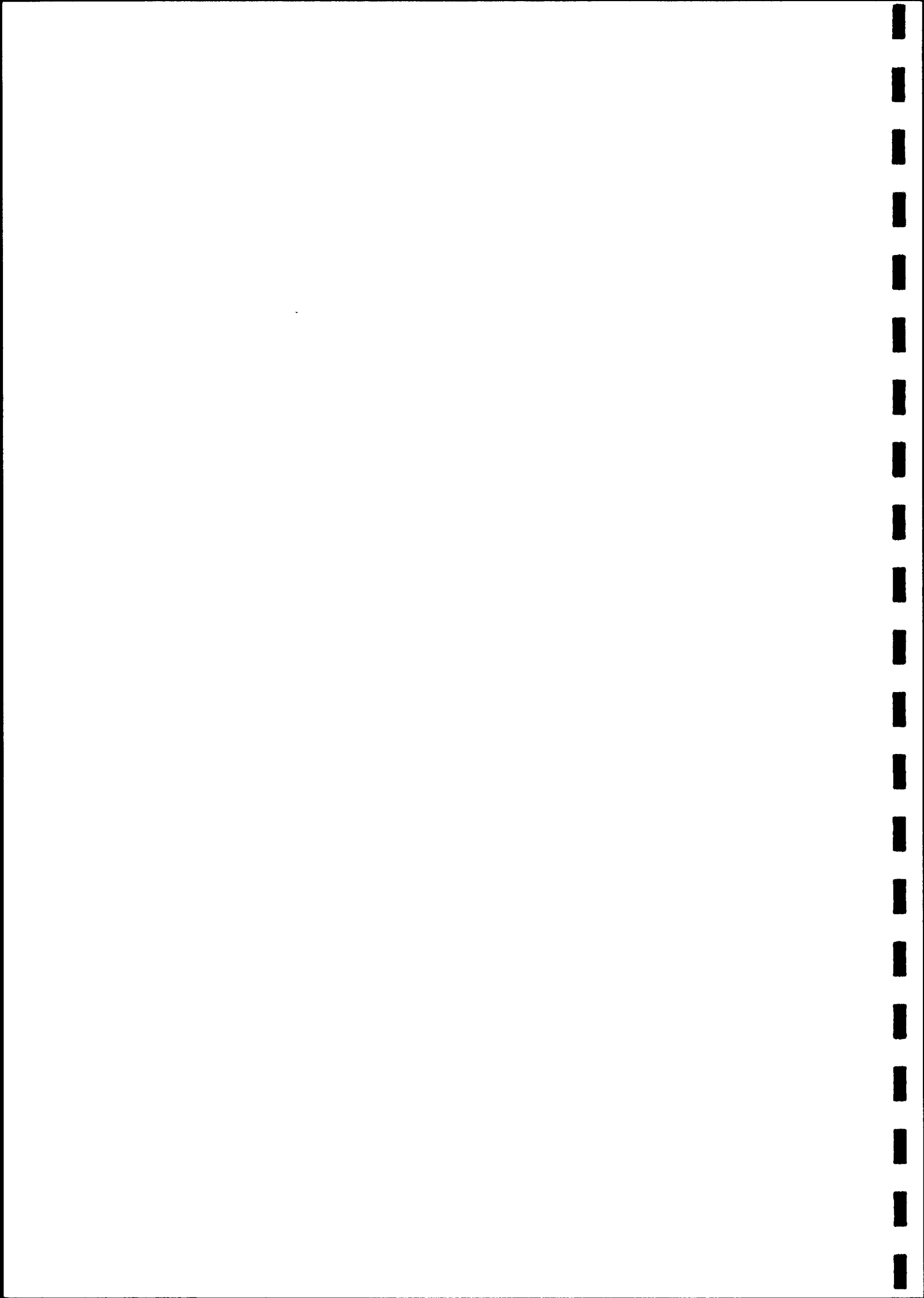
### Ornithology

48. Wind farms have the potential to affect birds by reducing the amount of habitat available, disturbing birds from important areas, and killing or injuring birds that collide with the rotor blades.
49. Consultations with SNH and RSPB indicated that there were concerns over the potential impacts of the proposed wind farm development upon raptors and breeding upland waders, most notably Golden Plover.
50. The proposed wind farm, including the 1km buffer zone included in the surveyed area does not lie within a site protected by a statutory nature conservation designation.
51. The importance of the bird interest at Farr and the surrounding area was evaluated using information gathered during survey work in 2001 and 2002. This work included surveys of the



use of the site by birds during the breeding season, birds of prey and bird movement. The locations used by nesting birds and areas used for hunting and territorial behavior were mapped.

52. A total of 20 species of bird were recorded over all three survey methodologies. Ten of these were species of raptor including seven which are listed as having special protection under Schedule One of the Wildlife and Countryside Act 1981. Golden Plover and Dunlin were identified as breeding on the site. No Schedule One raptors were recorded as breeding on, or close to, the site.
53. The early results of the various ornithological surveys were fed into the iterative design process for the development and the final layout was amended to take account of the ornithological interest of the site. In this way potentially significant effects have been reduced to an acceptable level.
54. Activities such as the construction of access tracks and turbine bases have the potential to cause displacement of some nesting species. It is proposed to remove vegetation outside of the breeding season for those areas likely to be affected to address this potential effect. Loss of habitat to access tracks, turbine bases and other infrastructure is also considered to be insufficient to have a significant effect on the bird interest at Farr.
55. During operation of the wind farm, the potential for collision has been assessed as low for all species identified and no significant impacts are predicted.
56. Current land management will be maintained and a peatland habitat restoration scheme is proposed which would benefit breeding waders that will be agreed in consultation with SNH and RSPB. Monitoring of breeding birds will continue for an agreed period during operations.
57. The assessment of the impacts of the proposed development on ornithology is summarised in the following table:



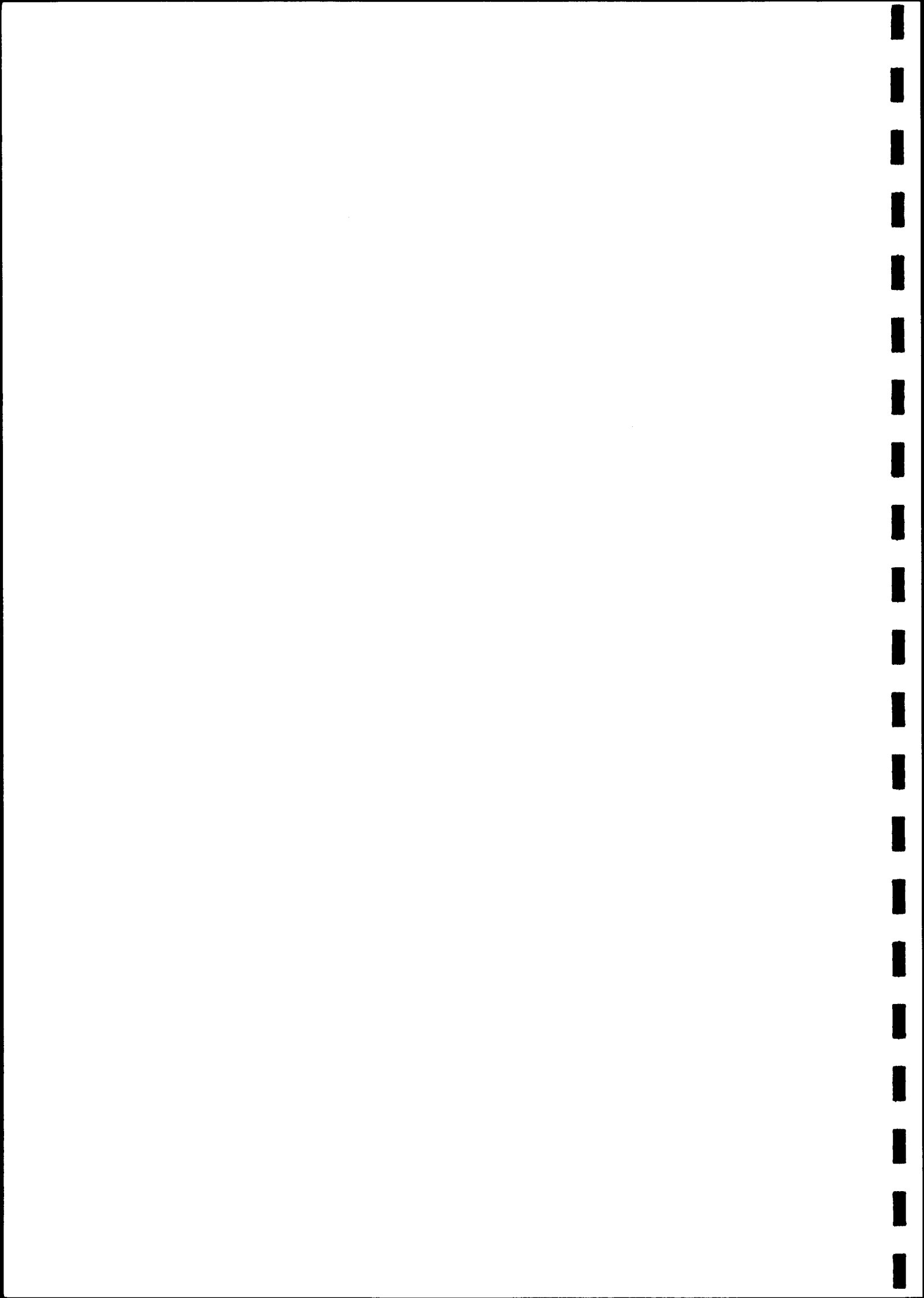


**Table 3 : Ornithological Impacts**

Activity	Potential Impact	Significance	Mitigation Measures
Construction of access roads, turbine bases and associated infrastructure	Direct loss of bird habitat (nesting/foraging/roosting)	Potentially significant	Design layout to avoid sensitive nesting areas. Carry out vegetation clearance outside the nesting season for potentially affected areas
	Indirect loss of bird habitat through disturbance	Not significant	
Construction and operation of turbines	Indirect loss of bird habitat through disturbance	Potentially significant	Design layout to avoid sensitive nesting areas. Peatland restoration scheme will provide enhanced habitat for species potentially affected
	Increased mortality due to collision of birds with turbine blades	Not significant	

### Site History and Archaeology

58. Consultation of both the Sites and Monuments Record and the National Monument Record for Scotland revealed no known archaeological sites within the proposal area, although a number of sites - ranging from prehistoric settlement and burial monuments to the traces of much more recent land use and settlement - flank both the Findhorn and Nairn river valleys. The archaeological assessment has identified 29 sites of archaeological interest. Many of these represent relatively recent use of the proposal area.
59. One site of *National* Importance (General Wade's Military Road, site 026) and three sites of *Regional* importance (Badachreamh – site 027, Uaigh an Duine-bheo – site 028 and Rout of Moy – site 029) have been identified. The rest of the sites of archaeological interest are of local importance.
60. All the archaeological sites within the area of the wind farm will be subject to a high degree of visual impact. None of these sites are individually or collectively of enough archaeological significance in their local and regional context for this visual impact to be a concern.



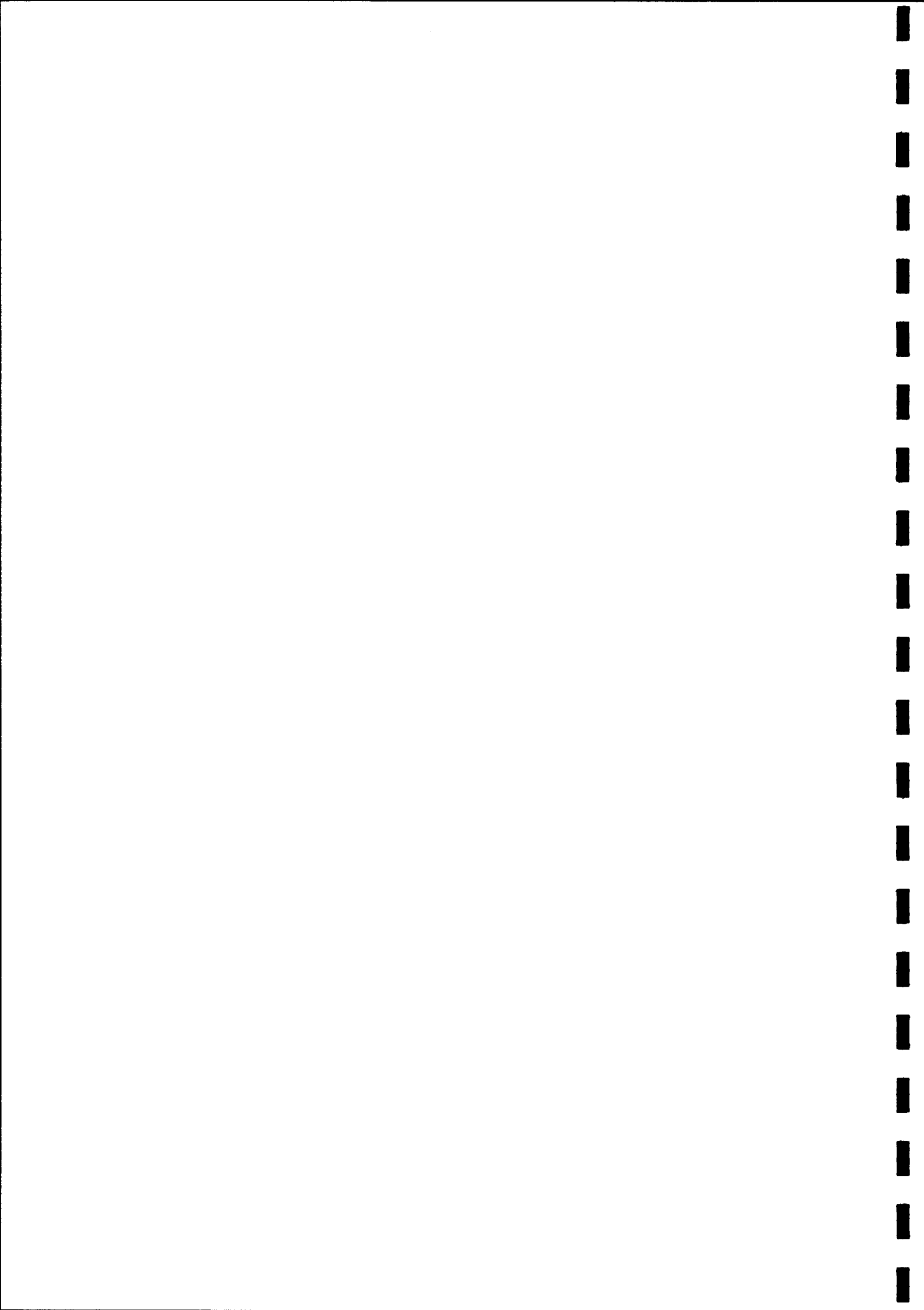
61. Assuming that appropriate mitigation measures are applied, as described within the Environmental Statement, and that particular attention is paid to the construction of the access route passing near to General Wade's Military Road, no detrimental physical impacts on these sites are anticipated.
62. The assessment of the impacts of the proposed development on the archaeological features of the area is summarised in the following table:

**Table 4 : Archaeological Impacts**

Activity	Potential Impacts	Significance	Mitigation Measures
Construction of access roads, turbines and ancillary services	Potential ground disturbance of archaeological remains	Not significant	Locate access tracks, and turbines away from archaeologically sensitive areas  Subject groundworks to an archaeological watching brief
General excavation	Ground disturbance	Potentially significant	Elucidate archaeological remains exposed during groundworks  Use site markers to identify known sites and any new finds
Operation of wind farm	Visual intrusion to sites of archaeological significance	Not significant	Avoid locating turbines within 50m of sites of archaeological significance

## Hydrology

63. The surface water features at the site are typical of the Highlands of Scotland with many small, relatively steep streams leaving the site. The site sheds water to two major rivers; the River Nairn to the north of the site and River Findhorn to the south and east of the site. Approximately 75% of the proposed development area (5.6 km<sup>2</sup>) sheds its water to the North to the River Nairn, amounting to approximately 4.8% of the catchment, with the remainder (1.9 km<sup>2</sup>) discharging to the River Findhorn, amounting to approximately 0.4% of the catchment.
64. The mean annual rainfall for the Findhorn catchment at Shenachie as measured for the period 1960 to 1995 is higher than the values reported for the rain gauges at 1263 mm. The estimated runoff for the period is 1040 mm/year. The runoff is the equivalent depth of rain that

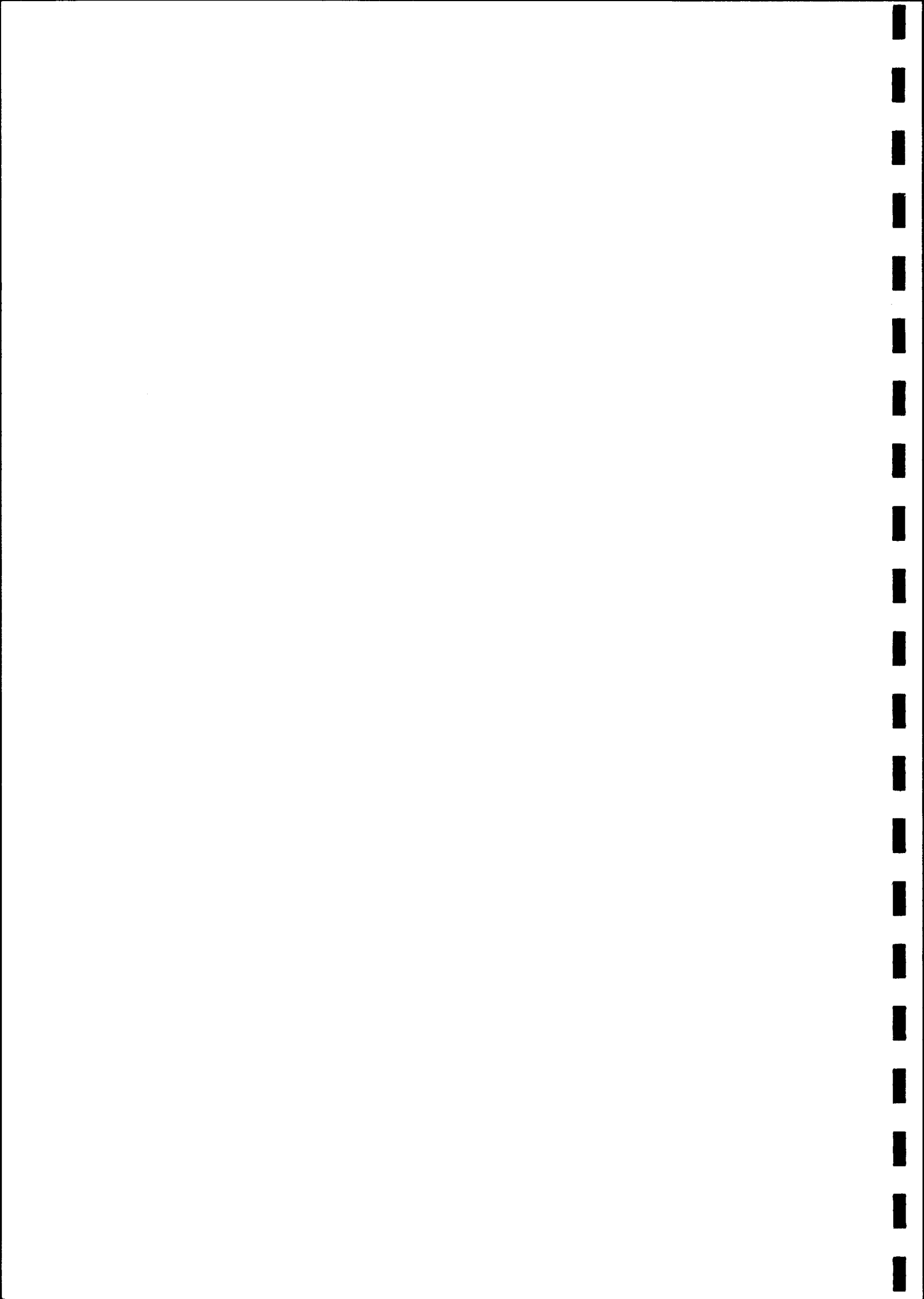


runs into surface waters. The remaining rainfall (in this case 223 mm/year) provides a guide to annual average evaporative losses.

65. The site is situated on a rock type that does not have significant groundwater flow. The map indicates that the crystalline Precambrian rocks offer little potential for groundwater storage and transport other than in cracks and joints that may be associated with tectonic features or surface weathering. Where these fractures are present, the groundwater emanating from springs are generally weakly mineralised.
66. It is considered that during use of the site, the impacts that the wind farm development will have on surface water and groundwater will be minimal. The greatest impact is likely to be from slightly increased runoff from roadways and turbine bases. However, the area that these cover as a percentage of the total site area is small (approximately 2.85 %) and monitoring data for the area shows that runoff is naturally high. Drainage channels and culverts will periodically be inspected and maintained to ensure that they are functioning correctly and that erosion is minimised.
67. The assessment of the impacts of the proposed development on the aquatic environment is summarised in the following table:

**Table 5 : Hydrological Impacts**

Activity	Potential Impact	Significance	Mitigation Measures
Construction of access roads	Changes to the soil moisture regime and therefore habitat due to localised modification of hydrological flow paths	Not significant	Work to be carried out in accordance with Pollution Prevention Guidelines and relevant codes of best practice
General excavation	Migration of particulate matter into water courses leading to a reduction in water quality	Potentially significant	Provide sediment traps



## Noise assessment

68. An assessment has been performed of the noise impact that is predicted to occur due to the construction and operation of the proposed Farr Wind Farm. The proposed development has been sited and designed to minimise noise levels at the residential properties that are located nearest to the site.
69. The assessment has taken account of current guidance which is contained in Planning Advice Note (PAN) 56: 'Planning and Noise', Planning Advice Note (PAN) 45: 'Renewable Energy Technologies', ETSU Report ETSU-R-97: 'The Assessment and Rating of Noise from Wind Farms' and relevant British Standards and other documents relating to noise and its effects upon humans.
70. This noise assessment shows how noise from the proposed wind farm, assuming that all turbines are operating at normal speed at the same time, would not exceed any of the target criteria defined in ETSU-R-97. These individual target criteria have been produced which are specific to each of the nearest residential properties and which have been derived from the latest national and international guidance. Separate target criteria have been developed for both night time and daytime periods, in order to protect both the sleep of local residents and to protect the outdoor amenity of the area.
71. Predicted levels at all identified sensitive receptors fall below these strict criteria during day and night, ensuring acceptable protection to the amenity of local residents. Properties that are more remote from the development will experience even lower levels of noise.
72. In terms of construction noise, the distances from the proposed working area to the nearest properties are large enough (greater than 3km) for the likelihood of disturbance due to construction noise to be negligible. Guidance given in BS 5228 will be used to ensure that best practicable method of minimising noise on the site will be adopted.
73. As a result, it is not anticipated that there will be any significant disturbance from noise at properties within the vicinity of the proposed wind farm. The assessment of impacts of the proposed development on noise is summarised in the following table.

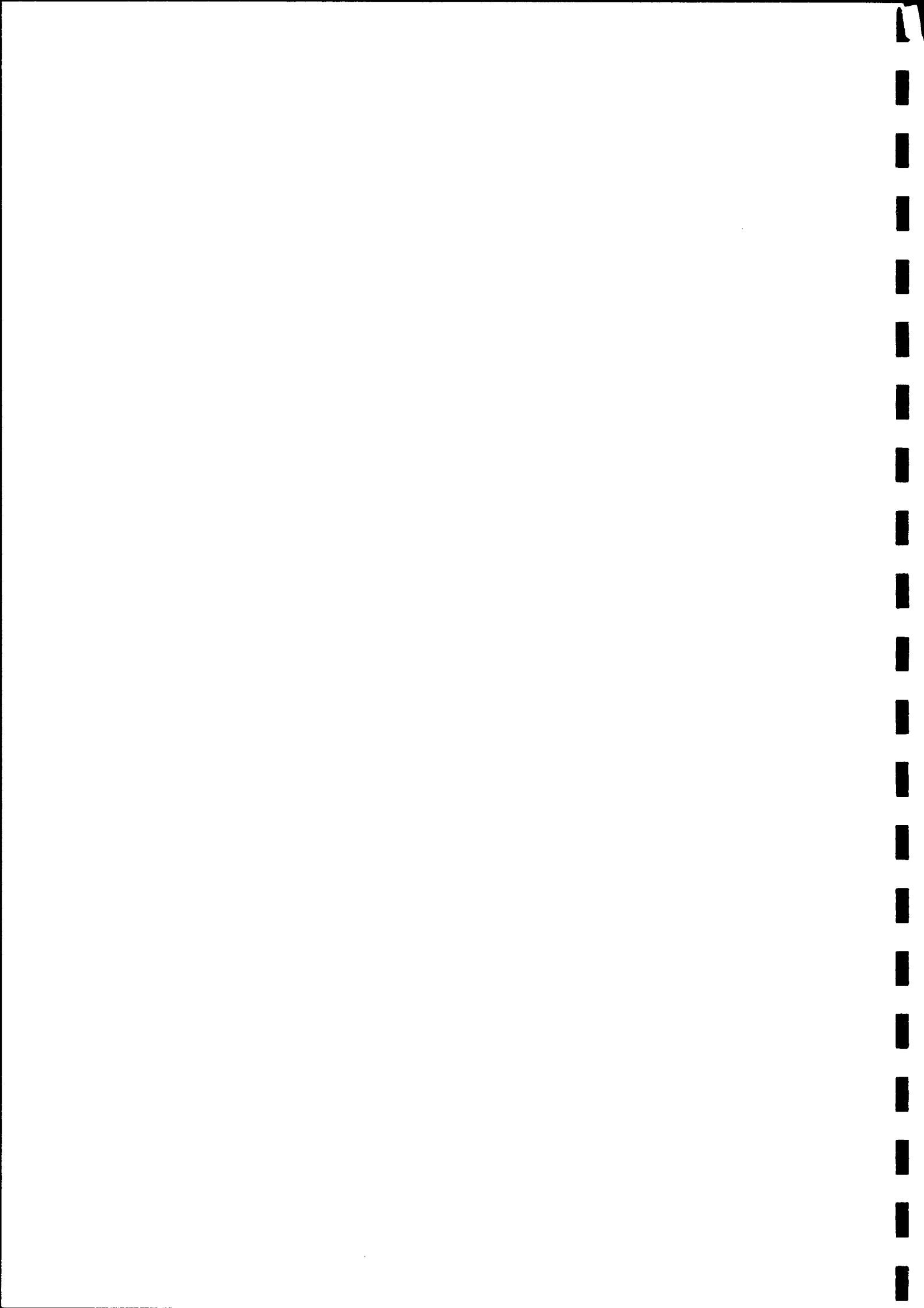
**Table 6 : Noise Impacts**

<b>Activity</b>	<b>Potential Impact</b>	<b>Significance</b>	<b>Mitigation Measures</b>
Construction of access roads, turbine bases	Construction noise	Not significant	Operate plant during normal working hours
Peat excavation	Construction noise	Not significant	Operate plant during normal working hours
Construction and operation of turbines	Aerodynamic and mechanical noise from operating turbines	Not significant	Site design has included adequate mitigation

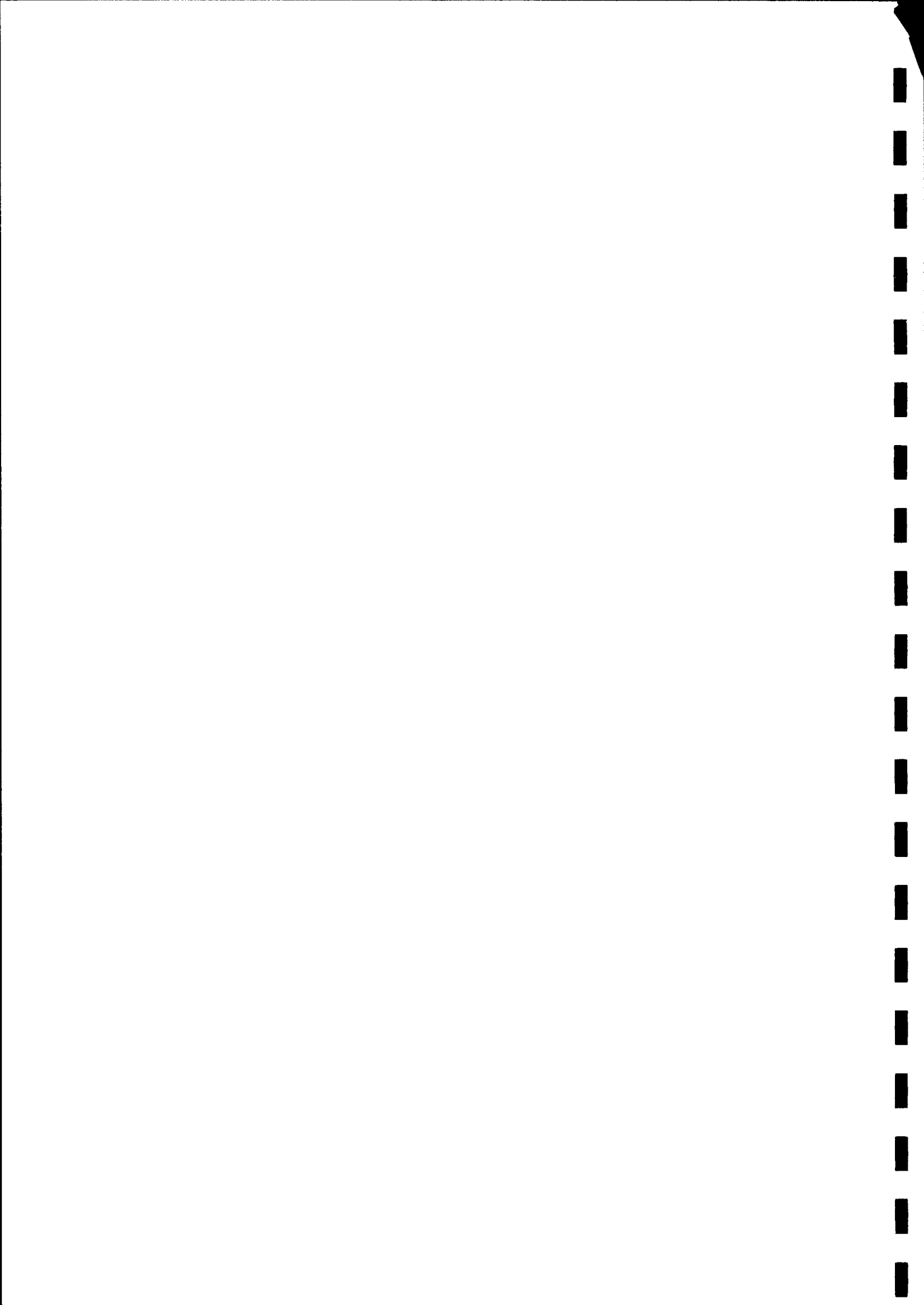
### **Socio-economic assessment**

74. Renewable energy sources in the UK currently generate almost 3% of the total electricity supply; approximately one tenth of this comes from wind energy. Wind energy is one of the best placed technologies to be utilised within the UK, with the UK being the windiest country in Europe with over 40% of the available resource, which is enough to meet the country's needs at least twice.
75. The British Wind Energy Association identify that in the UK there are now 69 wind farms operating with 941 turbines generating over 470 megawatts (MW) of electricity. This meets the average electricity needs of almost 322,000 homes. In Scotland there are now eleven wind farm projects with over 190 turbines generating over 130 MW of electricity meeting the needs of nearly 84,000 homes.
76. The Highlands and Islands economy is still characterised by the importance of primary industries such as agriculture, forestry and fisheries, however, the service sector accounts for over two thirds of employment with tourism and public administration particularly important. Inverness is the regional centre and is a centre for services, retail, tourism and manufacturing. Farming is the main primary activity in the area. There have also been strong developments in fish processing. Inverness and Nairn Enterprise are seeking to develop technology and knowledge based industries as well as continuing to promote tourism.





77. The site area is located in the Inverness and Nairn Enterprise (INE) area within the Highland and Islands network. The INE area covers a total of 322,213 hectares and lies at the northern end of the Great Glen on the shores of the Moray Firth.
78. Tomatin has a population of 350 and lies beside the A9 some 20 km from Inverness. The origins of the village date back to the establishment of the Tomatin distillery in the 1890s and growth has been very modest since then.
79. The population of the Inverness and Nairn area is generally increasing at a rate higher than that for the rest of the Highlands and Islands. It is also a younger population than the rest of the Highlands. According to latest estimates, during the period of 1991 to 1998, Inverness and Nairn experienced a population growth of 3.9%, bringing the population total to 75,940. This accounted for 20.5% of the total HIE area population.
80. Social impacts are likely to be directly related to the economic impacts which would derive from the proposed wind farm development. Direct employment and associated service requirements may contribute towards stemming the depopulation of Strathdearn that has been a recurring problem for many years. The provision of jobs in rural areas such as Strathnairn and Strathdearn may help to slow down the population migration into Inverness.
81. As part of their "good neighbour" policy, it is NWP's practice to establish local community funds at each of its operating wind farms, in consultation with local councillors. The same practice would apply to Farr. The funds are often provided to local community councils for assisting local community projects such as local schools, sports clubs, youth clubs and other projects. In addition to local community fund payments, NWP would be liable for local business rates estimated at a level of £1,000 per year per installed MW which would generate additional local authority revenue funding from the Farr development amounting to £90,000 – 110,000 for 20 – 25 years.
82. The Farr Wind Farm would have positive economic and social impacts. These include the following:
- employment generated during both the construction and operating phases;
  - opportunities for local businesses to supply goods and services; and
  - the generation of up to £11.25 million worth of electricity and associated green certificates each year.
83. The assessment of the socio-economic impacts of the proposed development is summarised in the following table:

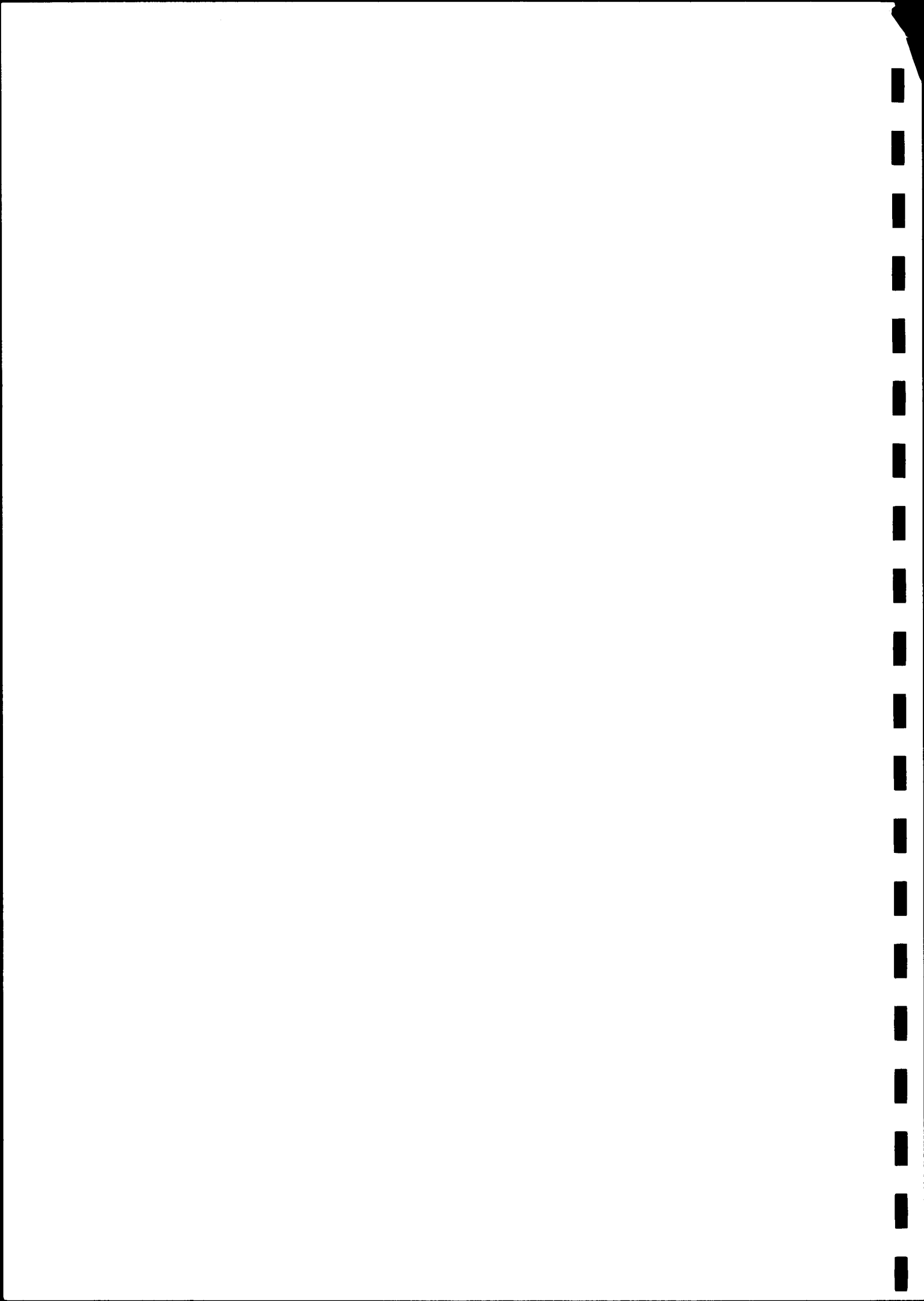


**Table 7 : Socio Economic Impacts**

Activity	Potential Impacts	Significance	Mitigation Measures
Construction and operation of wind farm development	Creation of employment opportunities for 60 people over a 24-30 month construction period, and for 4 - 6 full time jobs during the operational period	Beneficial	
	Potential for Highland and Scottish firms to supply goods and ancillary services	Beneficial	

### Transport assessment

84. The detailed studies carried out have determined the road improvements required to accommodate traffic generated by the development and have assessed the impact of this traffic on other road users. Although there would be an increase in traffic flows on the A9 leading to the wind farm site, this would be very low and the predicted flows would remain well under the capacity of the road. The increases in traffic would result in minor impacts on other road users during the construction period, which is short term in nature.
85. Once the wind farm becomes operational the effects of generated traffic (1 -2 vehicle movements per day) would be minor and have no significant impact on other road users and local communities.
86. The assessment of the impacts of the proposed wind farm development on transport is summarised in the following table:



**Table 8 : Transport Impacts**

Activity	Potential Impact	Significance	Mitigation Measures
Construction of access roads, turbine bases	Noise from construction traffic	Not significant	Maintain adequate facilities for road cleaning where required
	Increased traffic flows on A9	Not significant	
	Materials deposited on road surface	Not significant	
Peat excavation	Noise from construction traffic	Not significant	Construction traffic limited to normal working hours
	Increased traffic flows on A9	Not significant	
	Materials deposited on road surface	Not significant	Maintain adequate facilities for road cleaning where required
Construction and operation of turbines	Maintenance traffic	Not significant	

### Electromagnetic Interference

87. No radio facilities have been identified which might be negatively affected by the Farr Wind Farm development. Despite a formal 'No objection' from the MoD, there may be some potential for impact on the air traffic control radar at RAF Lossiemouth. Consultation with the MoD is ongoing on the scale of this impact and its significance.
88. The assessment of the effects of the proposed development on electromagnetic interference are summarised in the following table:



**Table 9 : Electromagnetic Interference Impacts**

Activity	Potential Impacts	Significance	Mitigation Measures
Operation of wind turbines	Electro-magnetic interference to mobile phone networks	Not significant	Final design should avoid significant effect, but consultation with MoD is on-going
	Radar interference to RAF Lossiemouth	Potentially significant	
	Shadow flicker	Not significant	





## CONCLUSIONS

89. The proposed Farr Wind Farm development is consistent with European, UK-wide and Scottish policies on the promotion of electricity generation from renewable resources and reduction of greenhouse gas emissions.
90. The proposed development is considered consistent with local and regional planning policies and with national guidelines on the development of wind farms.
91. The proposed wind farm would be located at the transition between the Rolling Uplands on the east edge of the Monadhliath Mountains and the Farmed Straths. The optimised wind turbine layout proposed for this location is considered acceptable in terms of its potential effects on landscape and visual amenity.
92. Although the proposed wind farm will involve the loss of some valued habitat, it is considered that the proposed peatland restoration to improve the extensively eroded and dissected blanket bog will result in a net positive effect on ecology.
93. During the construction stage of the proposed wind farm short term displacement of breeding birds on the site may occur, but this will be mitigated by soil stripping and vegetation removal in potentially affected areas prior to the breeding bird season. During the operational phase, the overall impacts of the scheme on the ornithology of the site are considered to be low and not significant.
94. There are few archaeological remains in the proposal area, and only one of national importance, being General Wade's Military Road. It is anticipated that any potential effects on this road may be avoided by adopting the proposed archaeological watching brief during the construction phase of the wind farm, and by siting within the 100m corridor to avoid any significant remains.
95. The development will not significantly affect the aquatic environment provided care is taken during the construction stage to avoid interfering with natural flow paths and to prevent the discharge of sediment into watercourses.
96. The noise effects of the construction and operation of the proposed development will not be significant.
97. The development is likely to have a net beneficial effect on jobs in the area and on associated commercial activity.



98. Following the process of project design, environmental assessment and consultation and the identification of comprehensive mitigation measures, it is concluded that an environmentally acceptable wind farm, providing wider benefits in terms of reduced carbon dioxide emissions, can be developed at this location.

