Scout Moor Wind Farm Expansion Limited
Environmental Statement
Non-Technical Summary

Proposed Extension to Scout Moor Wind Farm

March 2015
Environmental Statement
(Volume 4 : Non-Technical Summary)
Scout Moor Wind Farm Expansion

March 2015
This Non-Technical Summary outlines the findings of an Environmental Statement for the proposed expansion of Scout Moor Wind Farm on behalf of Scout Moor Wind Farm Expansion Limited with contributions from:

The Environmental Statement can be downloaded in full via the Scout Moor Wind Farm Expansion website (www.scoutmoorwindfarm.co.uk).

Copies of the Environmental Statement can also be obtained from:

Turley
1 New York Street
Manchester
M21 9DG

Tel. 0161 233 7676
Email. contact@scoutmoorwindfarm.co.uk

The cost of printing will be charged a cost price. However, the Non-Technical Summary of the Environmental Statement is available free of charge and an electronic copy of the ES can be provided on DVD for £10.
## Contents

1. Introduction ................................................................. 1
2. EIA Process and Methodology ........................................... 5
3. Relevant Legislation, Policy and Guidance ......................... 7
4. Summary of Environmental Effects ..................................... 9

Appendix 1: Figure 1 Application Site and Administrative Boundaries

Appendix 2: Figure 2 Proposed Layout (Master Plan areas of zoomed in plans)

Appendix 3: Figure 3 Proposed Layout (zoomed in)

Appendix 4: Figure 4 Proposed Layout (zoomed in)

Appendix 5: Figure 5 Proposed Layout (zoomed in)

**Contact**
Peter Rowe
peter.rowe@turley.co.uk

**Client**
Scout Moor Wind Farm Expansion Limited
1. **Introduction**

**About this Document**

1.1 This document is the non-technical summary [NTS] of the Environmental Statement [ES] which has been submitted as part of an application for planning permission to erect 16 additional wind turbines on land between the access tracks and wind turbines of the existing Scout Moor Wind Farm [SMWF] and on land to the north. The application also seeks consent for the necessary ancillary infrastructure and a comprehensive plan for the restoration and management of c.900 hectares of badly degraded moorland peat habitat.

1.2 The purpose of the NTS is to summarise the content and main findings of the ES in a clear and concise manner to assist the public in understanding what the environmental effects of the Proposed Development are likely to be. The full ES provides a more detailed description of the Proposed Development and the findings of the Environmental Impact Assessment [EIA] process.

**The Purpose of an Environmental Impact Assessment**

1.3 The Proposed Development exceeds the thresholds for wind farms set out under Schedule 2 of the Town and Country Planning (Environmental Impact Assessment) Regulations 2011 [TCPA EIA Regulations 2011]. Accordingly, an Environmental Impact Assessment has been undertaken and the results of that assessment are reported in the ES.

1.4 The purpose of the suite of ES documents is to describe: the baseline environmental conditions, the options for development which have been considered and discounted, the design of the Proposed Development, and to provide an assessment of likely significant environmental effects during the construction, operation and decommissioning phases in each environmental topic area. Where it has not been possible to design the Proposed Development so as to avoid the occurrence of likely significant environmental effects, the ES describes the mitigation measures that have been identified and incorporated into the scheme.

**About the Applicant**

1.5 The Proposed Development is being promoted by Scout Moor Wind Farm Expansion Limited [SML] a joint venture company between Peel Energy and United Utilities Energy.

1.6 The partnership enables the Proposed Development to benefit from United Utilities’ extensive experience of protecting and improving moorland environments and the quality of water which they supply to homes and businesses. Peel Energy brings technical knowledge and experience in developing and operating onshore wind farms.

1.7 Peel Energy is at the forefront of delivering low carbon energy for the UK and has a balanced portfolio in generation or development including wind, tidal, hydro power and
biomass. Peel Energy is a division of The Peel Group, one of the leading infrastructure, real estate and investment enterprises in the UK.

The Application Site

1.8 The Application Site is located within the administrative areas of Rossendale Borough Council and Rochdale Borough Council. It extends to 410.85 hectares and comprises land located between the turbines and access tracks of the SMWF and adjoining land to the north. It is broadly located between the urban areas of Bury, Blackburn / Accrington, Halifax and Manchester. Settlements such as Edenfield, Rawtenstall, Bacup and Whitworth are in closer proximity.

1.9 The Application Site is not located within a national landscape designation. There are no statutory designations for ecology within the Application Site. The site does not contain any listed buildings, conservation areas or scheduled ancient monuments.

1.10 The majority of the land within the Application Site comprises “Common Land”. It is primarily used for the grazing of sheep and cattle.

1.11 Large areas of the site are underlain of peat of variable depth. The peat habitat is in a very poor condition caused by a variety of factors including inappropriate live-stock management and illegal use of the moor by off-road vehicles.

1.12 The Pennine Bridleway passes 1.5km to the north-east of the Application Site and includes part of the Mary Towneley Loop. The Rossendale Way passes through the western and northern parts of the Application Site whilst the Rochdale Way passes along the south western part.

1.13 The centre-point of the Application Site is at National Grid Reference 382292, 418662.

The Proposed Development

1.14 The main components of the Proposed Development (as shown on Figure 2-5) include:

- The erection and operation of 16 no. turbines. These will be located on land to the north of the existing SMWF and on land between the existing turbines and access tracks of SMWF;
- The construction of associated ancillary infrastructure including crane pads, access tracks, underground electrical cabling, substation, anemometer mast and temporary construction compound;
- A scheme of peat moorland restoration and management including the temporary erection of fencing within the application site; this is presented in a Moorland Restoration and Management Plan [MRMP];
- Provision of a new permissive bridleway from Turn Village onto Scout Moor along with the creation of new pathways to link the existing and proposed wind farm access tracks to existing Public Rights of Way and the upgrading of sections of existing Public Rights of Way. Way marked recreational trails utilising the existing and proposed wind farm access tracks will be defined.

1 As defined by the Commons Act 2006
1.15 Permission is sought for a temporary period of 25 years\(^2\) after which the development would be decommissioned. It is to be noted that Turbine T16 shall be decommissioned earlier, in 2034, at the same time as the existing SMWF.

1.16 A Construction Environment Management Plan (CEMP), taking on board lessons learned during the construction of SMWF, will be implemented to ensure that the Proposed Development is constructed in line with the latest good practice guidance and standards. Construction will take approximately 12 months.

1.17 Whilst not forming part of the application for which planning permission is being sought the Environmental Statement also defines and provides an assessment of the likely significant environmental effects associated with the connection of the Proposed Development to the national electricity grid network and the creation of temporary, off-street car parking facilities for residents in Edenfield during the construction period.

1.18 The results of the Carbon Balance assessments have revealed that the expected annual energy output of the Proposed Development is 73,958 Mega Watt/year. Therefore, the potential expected CO2 emissions saved per year, should the wind farm energy replace the most carbon intensive form of electricity generation (coal-fired generation), is 67,006 tCO2. It has been calculated that the Proposed Development would have effectively paid back the expected carbon debt from manufacture, construction, impact on habitat and decommissioning within 1 year, if it replaced the fossil fuel electricity generation method. Accordingly, the results also demonstrate that, the Proposed Development is likely to generate over 23 years’ worth of clean energy which contributes significantly towards reducing greenhouse gas emissions from energy production.

### Consideration of Alternatives

1.19 There is no requirement, under the law relating to Environmental Impact Assessment [EIA], for an applicant to consider alternatives. However, where an applicant has considered alternatives the TCPA EIA Regulations require that the ES contains an outline of the main alternatives which have been considered by the applicant and an indication of the main reasons for the applicant’s choice.

1.20 In light of the legislative / policy based framework set out above and in view of the consideration that the Proposed Development would be located adjacent to an existing operational wind farm in an area with a very good wind resource, SML has not given consideration to the availability of alternative sites in the preparation of this ES.

1.21 SML has however considered a number of alternative configurations for the Proposed Development in the period leading up to the crystallisation of the proposals presented in the planning application and which have been the subject of EIA.

1.22 The iterative design process followed by SML has three distinct design stages, namely:

- **Stage 1:** Consideration of the Principle of and Options for Development
- **Stage 2:** The Preliminary Design, which was presented in the Preliminary Environmental Information Report (PEIR).

\(^2\) From the date of first exportation of electricity to the national electricity grid
1.23 Full consultation with the Councils, the local community and other key stakeholders has been undertaken throughout the iterative design process at each of the stages outlined above. The ES (Document 5) and Statement of Community Engagement (Document 10) confirm how comments made during these periods of consultation have informed the final design.

1.24 Details of the overarching design strategy which has informed the iterative design process to date, the key site constraints and the principal alternatives which SML has considered to date are presented in the ES (Chapter 3) and the Design and Access Statement (Document 4).

Change of Consenting Regime

1.25 Such is the nature of the changes which SML has made to the Proposed Development in direct response to the views expressed by stakeholders in the period June-August 2014, that the proposed development, by virtue of having an installed capacity of <50MW and a means of connection to the national electricity grid which is entirely separate to that of the existing wind farm, falls to be determined by Rochdale and Rossendale Borough Council’s, pursuant to the provisions of the Town and Country Planning Act 1990, as parts of the development fall within each of the local authority areas.3

---

3 During Stages 1 and 2 the Proposed Development was envisaged at a scale which would have defined it as a Nationally Significant Infrastructure Project and would have required an application for a Development Consent Order to be made to the Planning Inspectorate. The subsequent adjustments to the scheme mean that that the proposals can no longer be promoted as an NSIP.
2. **EIA Process and Methodology**

2.1 EIA is a process that identifies the likely significant environmental effects (both beneficial and adverse) of a proposed development and proposes mitigation to avoid, reduce and offset any potential significant adverse environmental effects.

2.2 This EIA has been prepared in accordance with the latest regulations and guidance on good practice including:

- TCPA EIA Regulations 2011
- National Planning Policy Guidance: Environmental Impact Assessment
- Guidelines for Environmental Impact Assessment: The Institute of Environmental Management and Assessment

2.3 The EIA process involved a number of key stages, as follows:

<table>
<thead>
<tr>
<th>Stage</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Scoping</td>
</tr>
<tr>
<td>2</td>
<td>Baseline Collection</td>
</tr>
<tr>
<td>3</td>
<td>PEIR Consultation</td>
</tr>
<tr>
<td>4</td>
<td>Additional Surveying, Design Testing, and Assessment</td>
</tr>
<tr>
<td>5</td>
<td>Environmental Statement</td>
</tr>
</tbody>
</table>

2.4 Key issues raised through the consultation process and addressed in the ES are as follows:

4 Now abolished
• Landscape Character and Visual Amenity
• Cultural Heritage
• Ecology
• Ornithology
• Noise and Vibration
• Highways and Transportation
• Hydrology, Hydrogeology and Geology
• Peatland Environment
• Aviation Infrastructure
• Telecommunications
• Shadow Flicker
• Socio Economic
• Access for Recreation
• Waste Management

2.5 Each environmental topic within the ES has been assessed by relevant specialists in the field using the following assessment framework:

• The assessment is based on the description of the Proposed Development presented in Chapter 3 of the ES (with reference to the Construction Environment Management Plan [CEMP] and the Moorland Restoration and Management Plan [MRMP]).
• The baseline environment has been taken to be that which exists at the time of the preparation of the Environmental Statement (i.e. Autumn 2014).
• All assessments have been completed on the basis that development will commence construction in 2016.
• All assessments are based on the understanding that the existing Scout Moor wind farm [SMWF] will be decommissioned and removed from the site within 12 months of the end of 2034. Access tracks would be retained on site.
• As the turbines within the SMWF, and other wind turbines relevant to the consideration of cumulative effects, are required to be decommissioned part way through the operational life of the Proposed Development, resulting in a change to the receiving environment, the assessment of operational phase effects is presented in two stages:
  
  (i) **Stage 1**: Considers the operational phase impacts of the Proposed Development in the period 2016-2034 both in addition to and in combination with the existing;
  
  (ii) **Stage 2**: Considers the potential changes to the receiving environment resulting from the aforementioned decommissioning of SMWF and T16 of the Proposed Development and assesses the impacts of the Proposed Development during the period 2034 to 2042, which is presently anticipated to be the end of the 25 year operational period.

2.6 The likely significant cumulative effects of the Proposed Development in combination with other operational, consented and ‘in planning’ wind energy developments, such as the Proposed Development at Rooley Moor have also been assessed.
3. Relevant Legislation, Policy and Guidance

3.1 Planning law requires that planning applications must be determined in accordance with the development plan unless material considerations indicate otherwise.

3.2 The relevant planning and energy policy context for the Proposed Development are as follows:

- The adopted Development Plan. The application site straddles the administrative boundaries of both Rossendale and Rochdale Borough Councils. The Development Plan, therefore, comprises:
  - Land within Rossendale Borough:
    - Rossendale Local Plan Part 1: Core Strategy (2011) (RLPCS)
  - Land within Rochdale Borough:
    - Saved policies of the Rochdale Borough Unitary Development Plan (2006) (RBUDP)
    - Greater Manchester Minerals Plan (2013) (GMMP)
  - Other material considerations include:
    - Statutory Instrument No.243 (2011) – The Promotion of Use of Energy from Renewable Sources Regulations
    - The Common Land Act 2006
    - The Planning Listed Building and Conservation Areas Act 1990
    - The National Planning Policy Framework (“the Framework”)
    - Planning Practice Guidance (PPG)
    - Supplementary Planning Documents
    - The emerging Rochdale Core Strategy (2013)
    - Landscape Capacity Study for Wind Energy Development in South Pennines (2010)
    - Renewable and Low Carbon Energy Study (2010)
    - The Plan for Growth
    - Ministerial Statements, and
    - Other renewable energy and climate change policies.

3.3 A more detailed review of the national and local planning and energy policy and guidance relevant to the Proposed Development is provided at Chapter 4 of the ES.

3.4 Broadly national and local policies reflect the Government’s policy which contains the objective to meet key goals on carbon emissions reductions, energy security and affordability and the legally binding target to cut greenhouse gases by at least 80% by 2050.
3.5 Furthermore, the need for renewable energy infrastructure projects is accepted. It is confirmed that substantial weight should be given to the contribution a project makes towards satisfying need when considering a planning application.

3.6 Onshore wind energy is also recognised as the most well established and currently most economically viable source of renewable electricity for future large scale deployment in the UK.

3.7 The aforementioned planning policy and guidance also provide detailed guidance on a range of topic areas against which proposals should be assessed including biodiversity, aviation and defence, flood risk, historic environment, landscape character and visual amenity, land use, noise and vibration, socio-economic, traffic and transport, waste management and water resources.
4. **Summary of Environmental Effects**

4.1 The ES records how the Proposed Development has been the subject of an extensive iterative design process drawing upon the expertise not only of SML’s appointed consultants but also that of the Council Officers, other statutory consultees and the views of the local community. This, together with the sensitive approach to design, the measures presented within the Construction Environment Management Plan (CEMP) and the Moorland Restoration and Management Plan (MRMP) means that the occurrence of likely significant adverse environmental effects has been avoided in most instances and where they are predicted appropriate mitigation measures have been proposed to reduce the effect to non-significant levels.

4.2 The only significantly adverse residual effects will be to landscape character and visual amenity in some locations. In some instances these effects would add little to the effects already caused by the existing SMWF and are temporary and entirely reversible.

4.3 Through the provisions of the MRMP the Proposed Development would deliver many different benefits as the peat moorland is comprehensively restored. Some of these benefits would be significant in EIA terms and include enhancements to biodiversity and peat habitat.

4.4 The subsequent paragraphs present a summary of the key environmental effects in each topic area. Further in-depth information is contained in the Environmental Statement (Volume 1 Main Text).

**Landscape Character and Visual Amenity**

4.5 The Landscape Character and Visual Impact Assessment identifies and describes the likely significant landscape and visual effects of the Proposed Development.

4.6 The assessment is informed by a combination of published data and field assessment, which includes a review of planning policy and guidance, a review of landscape character studies, aerial photography and ordnance survey mapping and site visits to agreed representative viewpoint locations.

4.7 The assessment focuses on a 10km radius study area centred on the Application Site [AS], reflecting the extent of potentially significant effects.

4.8 The assessment presents consideration of the effects that the Proposed Development may have ‘over and above’ the existing SMWF (i.e. the additional effects) and the effects that it may have in combination with the existing SMWF (i.e. as a 42 turbine development). The potential for cumulative effects with other operational, consented and proposed wind farm developments within a 35km radius study area is also considered.

4.9 The existing site setting is that of an open moorland hilltop, which affords extensive views where the landscape falls away to the settled valley floors below and itself forms the skyline and backdrop to views from surrounding areas. The existing Scout Moor turbines associate with a landscape that has been influenced by a history of industrial
development and settlement (and within which current wind farm development is an apparent feature).

4.10 The site is crossed by various Public Rights of Way, including the Pennine Bridleway and Rossendale Way. Open recreational land associated with the National Trust's landholding at Holcombe/Stubbins Estate is located to the west of the AS. The AS does not associate with any statutory landscape designations.

4.11 Views from settlements in closest proximity to the AS, including those between Rawtenstall and Bacup to the north and Edenfield to the west of the site, typically look upward from the valley floor towards the hilltop skyline. The site context also forms a skyline backdrop to an extensive area of Greater Manchester to the south of the AS. Representative viewpoints have been identified and photographed to illustrate a typical range of views of the Proposed Development.

4.12 The key landscape considerations associated with the Proposed Development include:

- The cumulative effect of wind energy development within the extent of study area;
- The potential for change in local landscape character arising from an increase in the extent and number of turbines associated with Scout Moor; and
- The potential effect on the setting of Registered Historic Parks and Gardens and Historic Designed Landscapes.

4.13 The key visual considerations associated with the Proposed Development include:

- The potential for change to existing views of the operational Scout Moor Wind Farm;
- The potential for increased visibility of turbines to areas that do not currently experience views of wind turbines, particularly within the settled valley to the north of the AS; and
- The potential for change in views over the lifetime of the Proposed Development, most notably following decommissioning of the existing operational turbines of the SMWF.

4.14 The likely significant landscape effects identified in the assessment include:

- The effect of turbines on the skyline accentuating and extending the influence of wind energy development into the character of the moorland fringe and valley floor landscape in the vicinity of Boarsgreave, Cowpe, Newchurch and Bacup;
- Change in the outlook of views from Historic Designed Landscapes at Heightside House and Whitaker Park where the presence of turbines would become a more visible component of the setting; and
- Change to the setting of National Trust Land at Holcombe Moor arising from an increased presence of development in the Pennine landscape.

4.15 The significant visual effects identified in the assessment include:

- Views from residential areas on the valley floor to the north looking up to the skyline, with particular consideration of receptors at Boarsgreave, Cowpe, Newchurch and Bacup and Britannia;
4.16 The occurrence of likely significant effects to landscape character and visual amenity from a commercial scale wind energy development is entirely normal and to be expected.

Cultural Heritage

4.17 There are no designated heritage assets within the Application Site boundary. However there are designated (and non-designated) assets in the wider area whose heritage significance could be harmed as a result of the Proposed Development being sited within the setting of the asset.

4.18 Of the non-designated heritage assets, 18 are located within the Application Site boundary. These primarily relate to post medieval remains associated with farmsteads and industrial activities (stone quarries and collieries). The assets are mainly of local (low) heritage significance, although remains at Cragg Quarry are well preserved and of regional (moderate) heritage significance.

4.19 Through a programme of archaeological recording prior to construction work commencing, to be defined within Written Scheme of Investigation, the effects to the archaeological resource on site would be negligible. The provision of interpretation boards in the vicinity of Cragg Quarry would better reveal the significance of that particular asset which is a benefit of the scheme.

4.20 The effect of the Proposed Development to the heritage significance of nearby listed buildings through development within their setting, over and above that already occasioned by the existing SMWF, would be negligible (not harmful) in most instances. Whilst some harm (not significant) would be occasioned to the significance of four assets, the special architectural and historic interest of the assets would be preserved.

4.21 The Proposed Development, in combination with the existing SMWF, would give rise to a significant environmental effect upon the heritage significance of two listed buildings (Grade 2) and none significant effects to other listed buildings. However, it is to be noted that in the majority of cases the majority of the combined effect derives from the presence of the existing SMWF and would arise even if the Proposed Development were not to be constructed.

Ecology

4.22 Ecological surveys have been carried out of the Application Site and wider survey area between 2009 and 2014. These have included: extended Phase I habitat and Phase II...
botanical surveys; bat roost assessment and bat activity surveys; great crested newt, otter, water vole and badger surveys; and habitat-based assessments for reptiles and freshwater crayfish. In addition, data gathering consultations have been carried out with local record-holding organisations.

4.23 No statutory designated sites are present within the Application Site boundary. The closest internationally designated sites are the Rochdale Canal Special Area of Conservation 6km to the south, and the South Pennine Moors SAC 9km east, both of which have been scoped out of the assessment due to distance and lack of any conceivable links with the Application Site. Potential effects to three nationally designated sites located within 2km - Lee Quarry, Hodge Clough and Lower Red Lees SSSIs – were also scoped out of the assessment as their designated interests are geological, the absence of hydrological connectivity with the Application Site and/or because of the separation distance.

4.24 Three non-statutory upland sites of county value are located within the Application Site boundary – Scout Moor Biological Heritage Site (BHS), Cowpe Moss and Brandwood Moor BHS and Knowl Moor Site of Biological Importance. Effects on these sites from the Proposed Development were assessed to arise from the loss of peatland habitats and habitat fragmentation during construction. However, through the construction techniques set out within the CEMP these effects will be minor and not significant. Through the implementation of measures set out within the MRMP the long term effects of the Proposed Development on these receptors will be significantly beneficial.

4.25 The habitat and botanical surveys confirmed the survey area to support a range of upland habitats, many of which showed signs of impoverishment due to human activities such as agricultural intensification and, in some areas, illegal recreational activities with off road vehicles. These habitats included dry and wet modified bog, acid flushes, acid grassland, marshy grassland, ditches and ponds, and man-made habitats such as quarries, tracks and boundary features. The effects on these features during the construction stage, through the implementation of measures within the CEMP would be minor and not significant. In the longer term the Proposed Development will, through implementation of measures within the MRMP, result in significantly beneficial effects to these receptors.

4.26 Bat activity surveys found activity across the Application Site was low, with three species recorded across the wider survey area – common and soprano pipistrelle and noctule bat, and one genus Myotis. Common pipistrelle was recorded most frequently. No roosts were found present. Effects on bats during the construction and operation of the Proposed Development are assessed to be minor and not significant both in terms of the effects of the Proposed Development in addition to those of the existing SMWF and in terms of effects in combination with the existing SMWF. Cumulative effects with the Rooley Moor Wind Farm would also be low and not significant.

4.27 Amphibian surveys conducted recorded no great crested newts, but palmate and smooth newts as well as common toad and common frog were present. Otter and water vole surveys within 100m of proposed infrastructure found no conclusive evidence of either species. Water vole are considered not to be present.
The enhancement measures in the MRMP referred to above are a fundamental element of the Proposed Development, and will continue beyond the predicted lifespan of the project. This element of the Proposed Development in particular is predicted to secure long term moderate, i.e. significant, ecological benefits, both to the local area, and to the wider region, by contributing significantly to the strengthening of upland ecological networks.

**Ornithology**

An extensive series of bird surveys has been undertaken within the Application Site and the wider surrounding area. These have covered:

- Breeding birds in 2010, 2011 and 2012
- Wintering birds in 2009/20, 2010/11 and 2011/12
- Flight activity surveys from fixed vantage points across a wide area including the Application site, between November 2009 and August 2012;
- Nest sites of protected birds of prey in summer 2011, with follow on consultation with local bird ringers in the following years;
- Breeding wading birds in summer 2014.

Combined with records obtained from a variety of consultees and with reviews of current literature on the effects of wind farms on bird life, these have provided a strong basis for assessing the likely effects of the Proposed Development on bird populations.

The ornithological survey area supports a range of bird species that are typical of the West Pennines, although, as is common in the region, populations are relatively low due to habitat degradation arising from historic factors such as overgrazing and atmospheric pollution.

Despite this, the survey area retains small populations of breeding golden plover, curlew, snipe and dunlin, and is hunted over by peregrines, leading to an assessment being made that the wider area that includes the Application Site is of local nature conservation value for birds. In the case of dunlin, which is an uncommon breeding species in Lancashire, the area is of county importance.

Where appropriate, the design of the Proposed Development has been altered to take account of bird interests. In making an assessment of the nature and scale of the remaining effects of the Proposed Development, account was taken of the CEMP and MRMP. These form part of the development, and aim to avoid or limit ecological effects, including those on birds; and to restore degraded upland habitats to the future benefit of bird species.

Potential effects included: collision risk; habitat loss; and displacement due to disturbance. In each case, the likely magnitude of effects during construction, operation and decommissioning were considered, as well as the effects of decommissioning the existing SMWF and Turbine 16 of the Proposed Development in 2034.

Short-term effects of low magnitude are predicted during the construction and decommissioning stages for the majority of the key species on the site, although these
would be of a slightly higher moderate magnitude in the case of snipe. None of these short term effects would be significant.

4.36 No adverse effects on dunlin are predicted during the operational stage. Effects of low magnitude which are not significant are likely to arise from limited displacement of golden plover. Initial impacts of moderate magnitude, which are not significant, are likely to occur as a result of limited displacement of curlew and snipe, although in the longer term the implementation of the MRMP would result in long term positive effects on these species. In the case of Dunlin these effects would be significantly beneficial.

4.37 In terms of collision risk, only curlew and peregrine flights were recorded in sufficient numbers to allow calculations to be made. In both cases, the effect of the Proposed Development in addition to that of the existing SMWF and in combination with the existing SMWF would not be significant.

**Noise and Vibration**

4.38 An assessment of the noise effect of the Proposed Development has been carried out to consider its construction, operation and de-commissioning. Potential cumulative effects with the existing SMWF and the proposed Rooley Moor Wind Farm have also been assessed.

4.39 Appropriate criteria for the assessment of construction/decommissioning noise and operational noise from the wind turbines have been taken from published guidance and used to inform the assessment process. Relevant standards include BS5228 and ETSU-R-97.

4.40 Construction noise has been assessed based on the example use of typical construction machinery. The predicted noise effect from the construction of the cable route and additional tracks, the turbine foundations and erection of the turbines, is found not to be significant. Construction traffic noise has been assessed based on the increase of traffic flow on the access roads. The results of the road traffic noise predictions indicate no significant effects arising from construction vehicles accessing the site during the construction of the Proposed Development due to the small increase in road traffic generated by construction vehicles.

4.41 Noise limits for the operational noise for the Proposed Development have been derived from baseline noise measurements carried out to inform the planning application of the operational SMWF and new baseline measurements at three locations specifically to inform this assessment.

4.42 Predictions of the operational noise levels have been carried out for a candidate turbine, a Vestas V80 turbine with a hub height of 60 m, in line with good practice recommendations by the Institute of Acoustics. The results of the predictions have been compared with the derived noise limits for 16 assessment locations representative of the closest residential locations around the Application Site and the adjacent proposed Rooley Moor Wind Farm site.

4.43 The noise from the Proposed Development acting in the absence of noise from the existing SMWF is below the proposed noise limits at all locations under all conditions.
The predicted cumulative noise levels of the operational SMWF, the Proposed Development, the proposed Rooley Moor Wind Farm and the consented single turbine at Stand Lees Farm would be below the noise limits at all locations under all conditions and therefore comply with ETSU-R-97, subject to two turbines of the Proposed Development being operated in a noise reduced mode during the daytime. Such controls can be secured by planning condition and would only be required if the Rooley Moor Wind Farm is constructed and becomes operational.

Highways and Transportation

The highways and transportation chapter of the ES investigates the potential effects on both the transport infrastructure and the environment in the vicinity of the existing SMWF and Proposed Development.

The ES focuses upon existing/baseline traffic data within a defined study area and the anticipated level of traffic associated with each phase of the Proposed Development in order to establish percentage increases in line with guidance. The assessment has also taken into consideration traffic which may be attracted to the local area associated with the proposed grid connection works and the Moorland Restoration and Management Plan [MRMP].

It has been demonstrated that the largest increase in traffic volumes would take place over a temporary period during the construction phase, with vehicle composition made up of light vehicles, heavy goods vehicles and abnormal load vehicles. The anticipated increase in vehicular traffic has been assessed by taking into consideration a number of local receptors, including Edenfield Primary School.

It has been shown that the effect of HGV’s associated with the construction phase in relation to Edenfield Primary School would be moderate. These effects will be mitigated/reduced through measures such as timetabling of abnormal load deliveries to avoid school drop off and pick up times and the provision of additional warning signage. These will ensure that any effects would not be significant.

The impact of HGV’s would be minor/negligible on the remaining receptors, and therefore not significant in EIA terms.

Vehicular movements to and from the Application site during the operational phase would be very limited and not significant both for the Proposed Development and the Proposed Development in combination with the existing SMWF.

The potential cumulative effect of the Proposed Development being constructed at the same time as the proposed Rooley Moor Wind Farm has also been considered. These effects are assessed to be minor and not significant as it is expected that the distribution of vehicular trips generated from both sites would be dispersed throughout the wider highway network, with minimal vehicular activity associated with Rooley Moor expected to utilise the same routes as the Proposed Development.
Hydrology, Hydrogeology and Geology

4.52 The effects of the Proposed Development have been assessed with regard to the hydrological, hydrogeological and geological environments within the Application Site and its surroundings.

4.53 The potential effects on surface waters, groundwater and geology that have been considered are:

- Pollution incidents;
- Erosion and sedimentation;
- Modification of surface water and groundwater flows;
- Modification of natural drainage patterns;
- Degradation to water supply quality and quantity; and
- Impediments to flow and flood risk.

4.54 Mitigation of potential adverse effects will be achieved through construction of the Proposed Development in line with the measures set out within the CEMP and through the implementation of the recommendations outlined in the Phase 1 Geo-Environmental Desk Study, Mining Risk Assessment and Detailed Hydrogeological Impact Assessment.

4.55 With these mitigation measures in place the effects during construction will be minor / barely perceptible.

4.56 Through the implementation and maturation of the measures of the Moorland Restoration and Management Plan (MRMP), the effects of the Proposed Development during the operational phase will be beneficial in terms of water quality (public and private) and flood risk, although not significantly so.

Peatland Environment

4.57 The baseline condition of the Application Site in respect of peat, vegetation, soils and earth heritage features (sites of geological/geomorphological value) has been characterised and the effects of the Proposed Development on these features assessed within Chapter 14 of the ES.

4.58 The ES confirms that the Application Site includes areas of peat including blanket bog, which is listed in Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006 as a Priority Habitat. Surveys and assessments which have been completed to assess the extent and condition of the peat and the results of water quality monitoring include:

- Peat depth mapping to find out the extent and depth of peat.
- A detailed vegetation survey of the moor to help establish the condition of the vegetation
- Peat and mineral soil surveys.
- Aquatic invertebrate monitoring
• LIDAR data were used in conjunction with software to model the likely effects of the proposed wind farm i.e. new tracks, turbines and crane pads on surface and sub-surface water movement following construction.
• A geological/geomorphological review of earth heritage features within the Application Site and the local region

4.59 The baseline surveys and assessments show that the peatland is currently in a degraded state and the water quality of the streams that drain the Scout Moor catchments has been adversely affected. This has been caused by a combination of factors: historic pollution, poor land management practices, wildfires and the illegal use of off-road vehicles. These activities have also led to a loss of the vegetation cover, reduction in plant species diversity, exposure of areas of bare peat and the accelerated erosion of peat as sediment and in solution as dissolved organic carbon (DOC).

4.60 The results of the surveys have been used to inform the design layout and construction techniques of the Proposed Development. They have also been used in devising the Moorland Restoration and Management Plan (MRMP), an integral element of the proposal to be implemented during construction and operation of the wind farm. The aim is to stabilise the peat body, restore the hydrology, improve water quality and encourage the re-growth of moorland vegetation.

4.61 The Proposed Development has been designed to minimise the loss of any blanket bog. During the construction phase, approximately 35,000 cubic metres of peat would be excavated. All of this would, however, be reused either in the restoration of construction working areas or as part of the MRMP measures. Whilst the CEMP identifies a series of measures to ensure the sensitive handling of peat, its excavation and translocation would result in its stratigraphy and structure being lost but its functionality could be re-established. Overall the effect of construction activities on the peat resource is assessed as being significantly adverse. The effect on other habitats and the mineral soil resource would not be significant.

4.62 However, during the operational phases of the Proposed Development the restorative measures promoted within the MRMP will take effect and mature. As a result there is expected to be a reduction in bare peat in the fenced areas, the presence of robust and flowering vegetation; higher water tables and rewetting of the peat and the colonisation of peatland areas by Sphagnum, thus indicating the potential for active peat generation. These effects would be realised during Phase 1 and by the end of 2034 the peatland environment would be substantially recovered from the degraded condition that it is in currently. This would be a significantly beneficial effect.

4.63 As implementation of the MRMP would continue in the period to 2042 there would continue to be appreciable improvements in the condition of the peat and its vegetation as the effect of reducing stock numbers and of applying restoration measures to the fenced areas becomes apparent. In the longer term, the effects of the MRMP would also be significantly beneficial.
Aviation Infrastructure

4.64 The potential effect of the Proposed Development on aviation stakeholders has been assessed using the criteria laid down in Civil Aviation Publication (CAP) 764 which provides extensive guidance.

4.65 Aviation may be affected by wind turbines in the following ways:

- Wind turbines located in areas close to airfields, or where certain types of low flying training are carried out, may pose a vertical obstruction hazard to aircraft;
- Wind turbines located within line of sight and operational range of air traffic control or air defence radar equipment can present a similar appearance to aircraft on the radar screen. There is also some potential for reduction of a radar's ability to detect and track aircraft in the area above and behind a windfarm; or
- Aeronautical radio navigation aids may be affected by wind turbines due to reflection or scattering of the signal by the rotor blades and towers.

4.66 The assessment has identified a number of radars that will have visibility of the existing and/or proposed turbines and concludes that:

- The airport authorities at Manchester International Airport have stated that they have no objection to the Proposed Development;
- NATS have agreed a mitigation strategy based on radar blanking and are undertaking a final assessment of the Proposed Development with this mitigation assumed to be in place;
- The Met Office radar at Hameldon Hill will have visibility of the turbines and a mitigation strategy based on radar blanking has been agreed;
- Staff at BAE Warton have agreed to meet to discuss the potential effects and the requirement for mitigation. If technical mitigation is required, several options are available.

4.67 With appropriate mitigation measures in place the effect of the Proposed Development on aviation infrastructure will be non-existent / negligible.

Telecommunications

4.68 The telecommunications assessment considers the potential effects of the Proposed Development on wireless communication services and television services. The term ‘wireless communication services’ refers to radio broadcasts from communication towers. Such services are commonly used by mobile phone operators and utility companies.

4.69 Consultation has been undertaken with Ofcom and individual telecommunications stakeholders in accordance with best practice. Specific assessment in accordance with Ofcom guidelines was undertaken for services that operate in the vicinity of the development. Re-consultation was undertaken with the relevant stakeholders to confirm their position where required.
4.70 Assessment and re-consultation has confirmed that none of the identified wireless communication services will be significantly affected.

4.71 For terrestrial television reception, a baseline survey has been undertaken to establish the strength of existing reception and those areas potentially at risk from interference. This shows that most households receive their signal from the Winter Hill Transmitter and that the signal strength appears to be stable and once decoded the picture and sound quality is good. In locations where the signal strength for Winter Hill is less good, relay transmitters provide good coverage.

4.72 The subsequent assessment of effects shows that the majority of the study area will not encounter any interference to signal from the Winter Hill transmitter. There is, however, the potential for interference to occur in some areas (including Norden, Haslingden and Summerseat), although this predicted interference may be due to the hilly terrain within the study area rather than the effects of the Proposed Development.

4.73 Overall the risk of interference to television signals during the operational phase of the Proposed Development is assessed to be low. The combined effects of the Proposed Development and the existing SMWF are also assessed to low. No cumulative effects with other wind farm developments have been identified. This is because the interference zones associated with other schemes are confined to areas where interference is not predicted for the Proposed Development.

4.74 In the event that effects were to be encountered and such effects demonstrably result from the operation of the Proposed Development, mitigation would be applied by SML. There are numerous technical mitigation solutions that can resolve the impacts of wind turbines on terrestrial television signals if these occur. The most appropriate option is likely to be re-tuning to an alternative transmitter or the provision of satellite TV. With such mitigation in places there would be no residual effects.

**Shadow Flicker**

4.75 Shadow flicker may occur under certain combinations of geographical position and time of day, when the sun passes behind the rotor of a wind turbine and casts a shadow over neighbouring properties. As the blades rotate, the shadow flicks on and off, an effect known as shadow flicker arises.

4.76 Whilst shadow flicker is generally not considered a problem outdoors as light is reflected in all directions, a moving shadow cast over a narrow opening such as a door or window could have a more pronounced effect.

4.77 Properties located within the study area for each stage of the development which have the potential to experience shadow flicker effects have been identified from OS digital map data and include all occupied buildings (residential, commercial, tourist etc.).

4.78 Reference has been made to the Guidelines for Wind Farm Development document (produced by the Sustainable Energy Authority of Ireland) and in particular its guideline that shadow flicker effects on neighbouring properties (offices and dwellings) within 500 metres of a turbine should not exceed 30 hours per year or 30 minutes per day.
4.79 Of the 39 potential receptors identified as being within the study area of the existing SMWF or the Proposed Development all but one are residential properties. 26 of the 39 potential receptors have been identified as having the potential to experience shadow flicker effects to varying degrees. However, almost all of the receptors would experience either no shadow flicker effect or a level of effect which is well below the aforementioned 30 hours per year. This conclusion applies to consideration of the effects of the Proposed Development in addition to the existing SMWF and in combination with the existing SMWF.

4.80 The only exception to this is a non-residential property associated with Scout Moor Quarry which would experience a greater level of effect but as this property is located more than 600 metres from the nearest turbine this effect would also not be significant.

4.81 As such no mitigation is deemed to be necessary to mitigate the effect of the Proposed Development.

**Socio Economic**

4.82 The socio-economic chapter of the ES describes the economic and social effects which might arise as a result of the Proposed Development.

4.83 The assessment draws on an economic model which quantifies the additional economic activity and employment which could arise in areas local to the development (i.e. the Local Impact Area and Sub-regional Impact Area – see ES Figure 18.1) as a result of the construction, operation and decommissioning activity. Alongside quantifiable economic effects, the socio-economic assessment considers wider effects on economic sectors which could be affected by the development; specifically the visitor economy, renewable energy, and agriculture.

4.84 Employment and Gross Value Added supported by the Proposed Development would be modest in the context of current levels of employment in the impact areas. A proportion of the employment opportunities will be available to local residents, although due to the international nature of supply chains for some key components this will be less than it otherwise might have been. There is scope to maximise this local supply chain and associated employment opportunities and SML has prepared a Local Employment and Supply Chain Plan to help achieve this.

4.85 The assessment of effects on the visitor economy in the impact area has determined that changes to visitor behaviour during the operational phase is likely to be minimal, following temporary minor adverse effects on tourism activity during the construction phase. The assessment of the potential effect in the Access and Recreation chapter of the ES suggests that there is a risk of visiting horse riders being discouraged from using the Mary Towneley Loop and their contribution to the local economy may be reduced as a result. However, the chapter also explains that an alternative route of similar interest and attractiveness is available for concerned riders to avoid riding in close proximity to the Proposed Development and will be promoted by SML through various media. In this way the magnitude of effect on the local economy as a result of horse riders potentially being deterred is assessed as being negligible.
The Application Site is used for sheep (mostly) and cattle grazing, plus some horses. A significant proportion of the Application Site is common land over which many grazing rights exist, although not all such rights are exercised. It is thought that there are now only eight people with registered grazing rights who are active graziers.

The most significant effect of the Proposed Development on agricultural interests is the MRMP which aims to restore the vegetation cover and re-wet areas of degraded peat. It would require a reduction in livestock numbers to 700 sheep equivalents and exclusion of stock from some areas. Financial compensation has been agreed in principle with the active graziers to achieve this reduced level of stocking whilst allowing them to enhance the viability of their businesses. The net effect is that, for the duration of the wind farm, the viability of the businesses of the active graziers would be enhanced. This would be of significant benefit. Similarly, benefits are available to relevant inactive graziers with whom discussions are on-going.

Access for Recreation

The potential effects of the Proposed Development on the use of the Scout Moor area by the public for informal recreation have been assessed. Within the study area (defined by a ring of public roads that surround the upland area), a statutory right of public access exists along public rights of way (e.g. footpaths and bridleways) and through open access rights. There are also some routes and areas that are available for public use by permission of the owner, typically for activity-specific recreation (such as mountain biking, ‘off-road’ driving, water sports).

The development has been designed to limit effects upon users of PROW, as far as possible within the constraints of achieving an effective wind farm layout. The embedded mitigation measures include (amongst others): the CEMP; the provision of new footpaths to link existing and proposed wind farm access tracks and the creation of a network of way marked recreational trails.

During construction activity, the following direct and indirect effects on visitors could arise:

- Exclusion from construction working areas from time to time;
- Short delays to journeys as recreational users wait, for example, to cross wind farm access tracks being used by construction vehicles;
- All or some of the above in combination.
- The visibility and audibility of construction activities with resultant effects to the enjoyment of the activity being pursued;
- Construction activities acting as a deterrent to use;

These effects would be generally adverse in nature but would be temporary and transient. However, the combination of good practice measures together with the generally low use of the site at times of construction activity will mean that resultant effects would be minor and not significant.

During the operational phase, there will be three potential direct effects of the Proposed Development:
• Interference with recreational activities by service vehicles for maintenance work;
• Deterrence of activity given the greater number of turbines and more extensive track network;
• The effects of shadows cast by turbine blades over PROW (especially bridleways) and noise associated with turbine operation.

4.93 The assessment of operational phase effects takes account of the provisions of the MRMP and the proposals by SML to create a way marked recreational trail utilising the existing and proposed wind farm access tracks and nearby PROW, together with associated interpretation boards and public information leaflets. It is assessed that the effect on receptors, such as equestrians, mountain bike riders and other visitors, will vary from minor to nil and will not be significant.

4.94 The potential indirect effects to visitors to Scout Moor during the operational period would include effects to the visual amenity of the visitor; changes to patterns of usage; enhanced experience and awareness of moorland restoration and biodiversity; and socio-economic effects associated with deterrence of use. None of these would amount to a significant effect.

4.95 No significant cumulative effects were found.

**Waste Management**

4.96 The majority of waste associated with the Proposed Development will be generated during the construction and decommissioning phases. Excavated peat and other excavated material will be generated, however, all peat will be reused within the MRMP and other excavation material will be re-used on site or elsewhere, having a negligible impact on local landfill capacity.

4.97 Material associated with wind turbine components and infrastructure generated during the decommissioning stage will be re-used where the material is considered suitable and where there are suitable markets for the material, having a negligible impact on local landfill capacity.

4.98 There will be workers on site during construction and decommissioning so there will be low levels of municipal waste which will be sent for recycling wherever facilities are available; having a negligible impact on local landfill facilities. There will also be low levels of sewage and polluted water as a result of plant, vehicle and wheel washes. However, it is expected that the quantity of polluted water sent for water treatment from the Proposed Development will be negligible compared to that of the population of the surrounding area; resulting in a negligible impact on local water treatment facilities.
Appendix 1: Figure 1 Application Site and Administrative Boundaries
Scout Moor Wind Farm Expansion

The Application Site and Administrative Boundaries

Figure 1   ES/001

Scale: 1:20000   A3

Date: 12/02/15

This material has been reproduced from Ordnance Survey digital map data with the permission of the Controller of Her Majesty's Stationary Office. © Crown copyright.
Appendix 2: Figure 2 Proposed Layout (Master Plan areas of zoomed in plans)
Appendix 3: Figure 3 Proposed Layout (zoomed in)
Scout Moor Wind Farm Expansion

TITLE:
Proposed Layout
Figure 3  ES/003

Date: 27/02/15

Scale: 1:5000 @ A3

Reference: internal

This material has been reproduced from Ordnance Survey digital map data with the permission of the Controller of Her Majesty's Stationary Office. © Crown copyright.
Appendix 4: Figure 4 Proposed Layout (zoomed in)
Appendix 5: (Figure 5 Proposed Layout (zoomed in))
Turley
1 New York Street
Manchester
M1 4HD

T 0161 233 7676