



Kirklees Local Plan

Technical Paper: Renewable and Low Carbon Energy

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1. Introduction

- 1.1 This technical paper addresses issues around the subject of renewable and low carbon energy. It provides a summary of national planning policy and the evidence used for the publication draft local plan to address these policy requirements. This technical paper provides justification for publication draft local plan policy PLP 26 Renewable and low carbon energy.

2. National Planning Context

National Planning Policy Framework (NPPF)

- 2.1 The National Planning Policy Framework (NPPF) requires local plans to plan positively to deliver renewable and low carbon technology developments. This is to help tackle climate change and address the environmental role of planning as set out in the NPPF. This helps to meet the UK's legally binding target to reduce carbon emissions by 80% on 1990 levels by 2050:

97. To help increase the use and supply of renewable and low carbon energy, local planning authorities should recognise the responsibility on all communities to contribute to energy generation from renewable or low carbon sources. They should:

- *Have a positive strategy to promote energy from renewable and low carbon sources;*
- *Design their policies to maximise renewable and low carbon energy development while ensuring that adverse impacts are addressed satisfactorily, including landscape and visual impacts;*
- *Consider identifying suitable areas for renewable and low carbon energy sources, and supporting infrastructure, where this would help secure the development of such sources;*
- *Identify opportunities where development can draw its energy supply from decentralised, renewable or low carbon energy supply systems and for co-locating potential heat customers and suppliers. (NPPF Ch.97)*

National Planning Practice Guidance (NPPG)

- 2.2 The National Planning Practice Guidance (NPPG) provides further clarity, stating that policies should be set to promote renewable and low carbon technologies, and these should be based on evidence that considers the opportunities for different types of technologies, the possible opportunities for district heat networks and consideration of the landscape impacts of these technologies:

Local and neighbourhood plans are the key to delivering development that has the backing of local communities. When drawing up a Local Plan local planning authorities should first consider what the local potential is for renewable and low carbon energy generation. In considering that potential, the matters local planning authorities should think about include:

- *The range of technologies that could be accommodated and the policies needed to encourage their development in the right places;*

- *The costs of many renewable technologies are falling, potentially increasing their attractiveness and the number of proposals;*
- *Different technologies have different impacts and the impacts can vary by place;*
- *The UK has legal commitments to cut greenhouse gases and meet increased energy demand from renewable sources. Whilst local authorities should design their policies to maximise renewable and low carbon energy development, there is no quota which the Local Plan has to deliver. (NPPG Para 003 Ref ID: 5-003-20140306)*

Ministerial Statement 18th June 2015

- 2.3 On the 18th June 2015 Greg Clark, the Secretary of State for Communities and Local Government published a ministerial statement specifically relating to wind energy developments. The statement relates to the decision making process for wind energy planning applications, but also contains implications for the plan making process:

When determining planning applications for wind energy development involving one or more wind turbines, local planning authorities should only grant planning permission if:

the development site is in an area identified as suitable for wind energy development in a local or neighbourhood plan; and

following consultation, it can be demonstrated that the planning impacts identified by affected local communities have been fully addressed and therefore the proposal has their backing.

In applying these new considerations, suitable areas for wind energy development will need to have been allocated clearly in a local or neighbourhood plan. Maps showing the wind resource as favourable to wind turbines, or similar, will not be sufficient. Whether a proposal has the backing of the affected local community is a planning judgement for the local planning authority.

- 2.4 Although stipulating that maps of wind resources or similar alone are not sufficient, a specific method has not been suggested as how to achieve this.

3. Capacity Assessment

Renewable and Low Carbon Energy Study, Maslen Environmental (2010)

- 3.1 Maslen Environmental was commissioned to undertake a study researching the capacity for renewable and low carbon energy across a partnership of councils situated in the South Pennines (Burnley, Pendle, Rossendale, Calderdale and Kirklees). In particular it was commissioned to identify the opportunities for delivering energy from renewable and low carbon sources, including micro and district scale technologies. The potential technologies and sources of renewable energy assessed are in the following table:

Table 1: Types of Renewable and Low Carbon Energy

Category	Sub-category Level 1	Sub-category Level 2	Comment
Electricity and Combined Heat and Power (CHP)	Large scale (>50 MW)	Wind	
		Biomass combustion	Municipal solid waste, virgin and recycled timber, energy crops, solid recovered fuel, all biomass co-firing with coal and other wastes
	Medium scale (50 kW to 50 MW)	Wind	
		Biomass combustion	Municipal solid waste, virgin and recycled timber, solid recovered fuel
		Biomass anaerobic digestion	Agricultural waste, food, waste, energy crops
		Hydro	
		PV	
	Natural Gas CHP	Heat use from CHP	
	Micro scale (<50 kW)	Wind	
		Hydro	
		PV	
Heat only	Medium scale (50 kW to 50 MW)	Biomass combustion	Municipal solid waste, virgin and recycled timber, solid recovered fuel
		Biomass anaerobic digestion	Injection to gas grid or local use
		Solar thermal	Water or space heating
		Heat pumps (heating and cooling)	Ground source, air source, water source
	Micro scale (<50 kW)	Biomass combustion	Virgin and recycled timber
		Solar thermal	Water or space heating
		Heat pumps	Ground source, air source, water source

3.2 The overall conclusions of the study are that:

Electricity

- *By far the most significant potential for renewable electricity in all the council areas is commercial scale wind.*

- *There is significant potential also for small scale wind energy.*
- *There is the potential for large amounts of solar electricity generation, but the current efficiencies of solar technology mean that installations have a relatively low load factor (a measure of effectiveness) and so installations may only deliver limited electricity. Improvements in technology may change this in the future.*

Heat

- *The largest available low carbon heat source is ground source heating. This is a mature technology which has been used extensively in Europe, particularly Scandinavia, but has been used less in the UK. There is a growing level of experience particularly in the south of England and London. The setup costs are likely to be more than the solar heat costs. Air source heating can also be used instead of ground source heating, although this may be slightly less efficient.*
- *There is also considerable potential for solar energy. This is a relatively mature technology and has some uptake in the area already. There is the potential for a high level of uptake of this technology.*
- *Additionally there is some potential for energy from wood (various forms), digestion and energy crops in most of the council areas (Rossendale has little energy crop potential). However, these are mainly small scale potential sources of renewable heat. It should be noted that if heat is obtained from biomass this may be at the expense of generating electricity from biomass.*

3.3 The Kirklees specific assessment looks at the technical potential to implement different types of renewable and low carbon energy. Relating to wind energy, the study maps wind speeds at different heights and suggests the potential capacity for commercial scale and smaller turbines based on wind speed, technical feasibility and existing constraints. The Kirklees section largely reflects the overall conclusions of the study identifying large scale wind as having the greatest potential to generate significant renewable energy across the district.

Low Carbon and Renewable Energy Capacity in Yorkshire and Humber, Aecom (2011)

3.4 This study was commissioned by Local Government Yorkshire and Humber to assess the resource for low carbon and renewable energy generation across the Yorkshire and Humber region and provides an evidence base to assist sub-regions and local authorities in preparing policies and strategies for renewable energy development at the sub-regional and local levels.

3.5 The study assesses the potential for low carbon and renewable energy generation in the Yorkshire and Humber region between 2010 and 2026. The conclusions of this study are largely in accordance with those of the Renewable and Low Carbon Energy Study produced by Maslen Environmental, with large scale wind being identified as having the greatest potential to generate significant renewable energy across the district.

Leeds City Region District Heat Network Scoping Study (2013-)

3.6 In 2013 the Leeds City Region Strategic Heat Programme was initiated to explore the potential of different areas to accommodate district heat networks. Initial 'heat mapping'

was completed across the City Region Local Authorities, including Kirklees, which estimated and mapped heat demand across the area. This was then followed by Huddersfield specific masterplanning study looking at Huddersfield Town Centre and the Leeds Road corridor. Final outputs from the energy masterplanning exercise identified technical potential for a heat network in Huddersfield Town Centre incorporating the energy from waste plant along Leeds Road with additional combined heat and power generation. The financial viability of this scheme was however identified as challenging.

- 3.7 Further detailed feasibility work is being explored using Department of Energy and Climate Change (now Department of Business, Energy and Industrial Strategy) funding which will research further the potential of a district heat network in Huddersfield Town Centre, with outputs expected in 2017.
- 3.8 Kirklees is continuing to work with the Leeds City Region / West Yorkshire Combined Authority and partner Local Authorities to identify resourcing to update heat mapping and early stage assessment of sites as development opportunities change and new sites come forward.

4. Impact Assessment

- 4.1 The council has commissioned a number of studies that assess the landscape characteristics of the district, and in particular the impact of wind turbine developments.

The Landscape Capacity Study for Wind Energy Developments, Julie Martin Associates and LUC, (January 2010, Updated October 2014)

- 4.2 The Landscape Capacity Study for Wind Energy Developments in the South Pennines was commissioned by a collaboration of six local planning authorities (Burnley, Bury, Calderdale, Kirklees, Rochdale and Rossendale) in the South Pennines to assess landscape types, sensitivity and capacity to accommodate wind turbine developments of different scales to help inform emerging development plans. This Study was published in January 2010 and the South Pennines Wind Energy Group has continued to meet to discuss national policy, development impacts, evidence requirements and emerging best practice.
- 4.3 In 2014 authorities within the South Pennines Wind Energy Group (Rossendale, Burnley, Calderdale, Kirklees and Barnsley) commissioned an update of the Study to reflect changes in national policy and to assess cumulative and cross border impacts of existing and emerging wind turbine developments. The update was published in October 2014 and included a shared web site which maps existing and consented wind turbine developments, which is periodically updated by each authority. This is a key source of information to understand the potential cross border and cumulative impact of development proposals coming forward over the plan period.
- 4.4 The South Pennines Wind Energy Landscape Study also considers the cumulative impact of existing and consented wind turbines including cross border impacts. It is recognised that the study provides an assessment at a point in time. As part of the study commissioned by the South Pennines Wind Energy Group a live website has been created that monitors new

wind turbine planning permissions and developments to understand the evolving cumulative impact.

Landscape Guidance for Wind Turbines up to 60m high in the South and West Pennines, Julie Martin Associates (January 2013)

- 4.5 Further evidence has also been commissioned which provides guidance for wind turbines up to 60m high in the South and West Pennines (Blackburn with Darwen, Burnley, Calderdale, Hyndburn, Kirklees, Pendle, Rochdale and Rossendale). The guidance presents generic advice aimed at developers, local authority planning officers and members, on the landscape and visual issues associated with the smaller classes of wind turbine, including good practice guidance in relation to location, siting, layout, design and cumulative impacts.
- 4.6 The guidance is intended to complement the Landscape Capacity Study for Wind Energy Developments in the South Pennines. It is intended to help developers understand (and respond effectively to) the specific landscape and visual issues associated with smaller classes of turbine. The guidance deals solely with the landscape and visual siting and design aspects of proposals for smaller scale wind turbines.

Kirklees District Landscape Character Assessment, LUC (July 2015)

- 4.7 In support of the emerging draft local plan, the council commissioned a Landscape Character Assessment to provide a sound evidence base to consider the character and valued features of the different landscapes of Kirklees District when considering new development or land uses. The primary aim of the Landscape Character Assessment is to ensure the area's distinctive, varied and dynamic landscapes are considered, and opportunities to enhance and strengthen character are pursued wherever possible. This study can be used as context of any renewable and low carbon development that is of a scale that will have a landscape impact.

Castle Hill Setting Study, Atkins (May 2016)

- 4.8 The Castle Hill Setting Study is evidence supporting the local plan which considers the setting of the Castle Hill Scheduled Ancient Monument in Huddersfield. This study considers the impact of development including wind turbines upon the setting of Castle Hill. This study should be considered to inform renewable and low carbon proposals that fall within the scope of the assessment.

5. Conclusion

- 5.1 It is considered that the draft renewable and low carbon energy policy PLP 26 and its supporting evidence address the requirement of the NPPF to have a positive strategy to promote energy from renewable and low carbon sources. The evidence base also addresses the requirements of the NPPG to consider the different technologies that are available along with the potential landscape impacts, particularly those of wind turbines.
- 5.2 The Maslen Environmental and Aecom Studies were published in 2010 and 2011 respectively; the technologies and assumptions identified are still relevant and in the case of some technologies such as solar, costs have decreased, increasing viability. Recent changes to government subsidy of wind and solar generation may affect the financial viability of some types of renewable and low carbon technologies in the short to medium term. The base line evidence however, suggests that in terms of potential generation of renewable and low carbon energy, large scale wind development would prove most effective across Kirklees, and in turn, assist in meeting the country's legally binding climate change commitments.
- 5.3 In relation to wind turbines, the council's evidence in support of the policy includes detailed landscape assessment commissioned collaboratively to consider cross border and cumulative impacts from experts in their field applying national best practice. These assessments consider different landscape character types and their relative sensitivity to different scales of wind turbine development. The Wind Turbine Landscape Sensitivity Maps in the Local Plan identify 5 scales of sensitivity (Low, Low-Moderate, Moderate, Moderate-High, High) against 5 sizes of turbine (<=24m, 25-59m, 60-89m, 90-129m, >=130m). These maps allocate varying levels of suitability across the district in relation to underlying landscape character and turbine height. The on-going cumulative and cross border monitoring of operational and consented turbines provides a further layer of analysis to underpin the policy in relation to wind turbines. This evidence base provides justification of the policy and the context to apply the criteria based policy in relation to wind turbine developments.

Appendix A

Policy PLP 26

Renewable and low carbon energy

Renewable and low carbon energy proposals will be supported and planning permission granted where the following criteria are met:

- a. the proposal would not have an unacceptable impact on landscape character and visual appearance of the local area, including the urban environment;
- b. the proposal would not have an unacceptable impact on protected species, designated sites of importance for biodiversity or heritage assets;
- c. the statutory protection of any area would not be compromised by the development;
- d. any noise, odour, traffic or other impact of development is mitigated so as not to cause unacceptable detriment to local amenity;
- e. any significant adverse effects of the proposal are mitigated by wider environmental, social and economic benefits.

Where the above criteria are met, the council encourages dialogue with local community groups promoting community renewable and low carbon energy schemes.

Proposals for wind turbines must consider the Kirklees wind turbine landscape sensitivity maps which identify the suitability of different sizes of turbine across the district.

The creation of district heat networks is encouraged across Kirklees. Heat networks can be developed at different scales and all new developments should consider their potential. Proposals requiring a master plan should explore the potential of developing a heat network, or connecting to an existing network.

Policy justification

12.6 The NPPF requires local plans to plan positively to deliver renewable and low carbon technology developments. This is to help tackle climate change and address the environmental role of planning as set out in the NPPF. This helps to meet the UK's legally binding target to reduce carbon emissions by 80% on 1990 levels by 2050.

12.7 The National Planning Policy Guidance (NPPG) provides further clarity, stating that policies should be set to promote renewable and low carbon technologies, and these should be based on evidence that considers the opportunities for different types of technologies, the possible opportunities for district heat networks and consideration of the landscape impacts of these technologies.

12.8 The council has considered the potential low carbon and renewable technologies that can be developed within the district. The Renewable and Low Carbon Energy Study, Maslen (September 2010) addresses Kirklees specifically. The Low Carbon and Renewable Energy Capacity in Yorkshire

and Humber, Aecom (March 2011) also considers the potential for different technologies in Kirklees within the Yorkshire and Humber Region context.

12.9 Within the district there are opportunities for renewable and low carbon energy development using a range of technologies including:

- wind;
- solar photovoltaic (PV);
- solar thermal;
- heat pumps (ground source, air source, water source);
- hydro;
- biomass combustion;
- biomass anaerobic digestion;
- district heat networks.

12.10 The council has commissioned evidence to assess the impact of the Local Plan upon landscape, including specific consideration of the impact of wind turbines. The South Pennines Wind Energy Landscape Study, Julie Martin Associates and LUC (October 2014) and Landscape Guidance for Wind Turbines up to 60m high in the South and West Pennines, Julie Martin Associates (January 2013) have been collaboratively commissioned by the South Pennines Wind Energy Group authorities (Kirklees, Calderdale, Barnsley, Rossendale, Burnley) to assess and understand the sensitivity of different landscapes to varying scales of wind turbine development. These assessments are based upon national landscape character areas and define local character areas and types using best practice and national landscape assessment guidance.

12.11 The South Pennines Wind Energy Landscape Study includes landscape sensitivity maps. These maps identify levels of suitability based on landscape sensitivity in relation to 5 different height categories of turbine. These landscape sensitivity maps are included in the Local Plan and can be found in the Maps and Diagrams section of the document. The maps must be considered as part of any wind turbine proposal as they allocate varying levels of suitability across the district in relation to underlying landscape character and turbine height. The South Pennines Study also includes further detail and guidance about siting, layout, design and assessment of landscape, visual and cumulative impacts of wind turbines, and must also be considered.

12.12 The South Pennines Wind Energy Landscape Study also considers the cumulative impact of existing and consented wind turbines including cross border impacts. It is recognised that the study provides an assessment at a point in time. As part of the study commissioned by the South Pennines Wind Energy Group a live website has been created that monitors new wind turbine planning permissions and developments to understand the evolving cumulative impact. This website must also be considered as part of any wind turbine proposal:

<http://www.lucmaps.co.uk/SPWED/mainmenu.html>

12.13 The Castle Hill Setting Study is evidence supporting the Local Plan which considers the setting of the Castle Hill Scheduled Ancient Monument in Huddersfield. This study considers the impact of wind turbines upon the setting of Castle Hill and must be considered as part of any wind turbine proposal that falls within the radius of the setting study assessment.

12.14 The potential for district heat network development has been explored around Huddersfield town centre and the Leeds Road corridor as part of the Department of Energy and Climate Change

(DECC) funded heat mapping for Leeds City Region. The energy master planning process is on-going and promoters of development in and around Huddersfield town centre and the Leeds Road corridor are encouraged to explore the potential for district heat network development. The creation of district heat networks is encouraged across Kirklees. Heat networks can be developed at different scales and all new developments should consider their potential. Proposals requiring a master plan should explore the potential of developing a heat network, or connecting to an existing network.

12.15 Renewable and low carbon technologies can be incorporated effectively into building design and this is encouraged in the Local Plan Design Policy. Furthermore Building Regulations require new developments to incorporate carbon saving through design and construction methods.

12.16 Local community groups and businesses have the opportunity to develop their own renewable and low carbon schemes to take ownership of reducing carbon emissions globally whilst enjoying the benefits locally. The council is signed up to Kirklees Climate Local which sets targets to reduce its own carbon emissions. Developers, local community groups and businesses are encouraged to work with the council in helping to reduce carbon emissions across the district.

12.17 Developments for wind turbines have national policy requirements and guidance relating to public consultation. There is a legal requirement to carry out pre-application consultation with the local community for planning applications for wind turbine development involving more than 2 turbines or where the hub height of any turbine exceeds 15 metres as identified in [Article 3 of the Town and Country Planning \(Development Management Procedure\) \(England\) \(Order\) 2015](#).

12.18 As part of the planning application process, following consultation, it should be demonstrated that the planning impacts identified by affected local communities have been fully addressed and therefore the proposal has their backing. Whether the proposal has the backing of the affected local community is a planning judgement for the local planning authority.

Delivery and implementation

12.19 The policy is delivered by taking a positive approach to applications for renewable and low carbon technology developments that meet the appropriate criteria. Alongside, the production of a Supplementary Policy Document in respect of wind turbines to consider safety aspects.

Links with strategic objectives

- Promote development that helps to reduce and mitigate climate change, and development which is adapted so that the potential impact from climate change is reduced and to help the transition towards a low carbon economy.

Supporting evidence

- South Pennines Wind Energy Landscape Study, Julie Martin Associates and LUC (October 2014)
- Landscape Guidance for Wind Turbines up to 60m high in the South and West Pennines, Julie Martin Associates (January 2013)
- Kirklees District Landscape Character Assessment, LUC (April 2015)

- Castle Hill Setting Study, Atkins (May 2016)
- Low Carbon and Renewable Energy Capacity in Yorkshire and Humber, Aecom (March 2011)
- Renewable and Low Carbon Energy Study, Maslen (September 2010)
- Kirklees Climate Local (<http://www.kirklees.gov.uk/you-kmc/deliveringServices/otherPolicies.aspx>)