SOUTH RIBBLE BOROUGH COUNCIL

forward with South Ribble

Renewable and Low Carbon Energy

Supplementary Planning Document

January 2014

Contents

INTRODUCTION

i. Supplementary Planning Documents (SPDs) were introduced by the Planning and Compulsory Purchase Act (2004) as part of reforms to the planning system. One of the functions of an SPD is to provide further detail/guidance on policies and proposals within the development plan. SPDs must be consistent with national planning policies as well as local policies set out in the development plan.

ii. This SPD on Planning for Renewable and Low Carbon Energy has been produced in accordance with all national and local regulations, policy and guidance in mind. This SPD is intended to sit within the Local Development Framework (LDF) to support policies within the Central Lancashire Core Strategy and the South Ribble Site Allocations and Development Management Policies DPD.

1. The purpose of this Supplementary Planning Document (SPD)

1.1 In recent years, the generation of energy from renewable and low carbon sources has had an increasingly high profile. This is due to a greater appreciation and understanding of the issues surrounding climate change, a reduction in the price of renewable and low carbon technologies, improvements in the efficiency and availability of technologies, rising energy prices, and various Government led financial incentives to encourage further uptake.

1.2 The purpose of this Renewable and Low Carbon Energy Supplementary Planning Document (SPD) is to set out the Council's approach to this type of development. Within South Ribble there has been an increase in the number of planning applications and enquiries received for renewable and low carbon energy projects. This document aims to provide advice and guidance for applicants on the suitability, appropriate location of such technologies and how the planning system relates to them.

1.3 It is the role of the Local Planning Authority (LPA) to balance the need for and the benefits of these projects against any adverse effects they may have. Within the Borough there are some very special natural and built environments whereby safeguards need to be in place to protect them from any inappropriate development. Chapter 6: Planning Constraints, of this SPD discusses this in greater detail.

1.4 As well as those with formal designations, much of the Borough features highly attractive areas of landscape and buildings. The purpose of this SPD is to provide guidance, advice and clarity for all parties on how to balance the needs of protecting the qualities of the Borough with the increase in uptake of renewable energy and low carbon technologies.

1.5 This SPD is structured by taking each technology individually and setting out the pros, cons and issues related with it. It provides guidance on how to minimise any potential harmful effects, and whether planning permission is required or not.

2. Policy Context

National Planning Policy Framework (NPPF)

2.1 The National Planning Policy Framework (NPPF) set out the Government's planning policies for England and how these are expected to be applied. Within this document are a series of relevant sections on renewable energy which need to be considered in line with this SPD.

2.2 Section 91 of the NPPF relates to Greenbelt, and indicates that elements of many renewable energy schemes will be inappropriate in the Greenbelt. Developers must demonstrate very special circumstances if such projects are to proceed.

2.3 Section 97 of the NPPF discusses the need '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 cumulative 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; for example, *(a) In assessing the likely impacts of potential wind energy development when identifying suitable areas, and in determining planning applications for such development, planning authorities should follow the approach set out in the National Policy Statement for Renewable Energy infrastructure (read with the relevant sections of the Overarching National Policy Statement for Energy Infrastructure, including that on aviation impacts). Where plans identify areas as suitable for renewable and low carbon energy development, they should make clear what criteria have determined their selection, including for what size of development the areas are considered suitable.*
- Support community-led initiatives for renewable and low carbon energy, including developments outside such areas being taken forward through neighbourhood planning; and
- 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.

2.4 Section 98 of the NPPF discusses criteria 'when determining planning applications, local planning authorities should':

- not require applicants for energy development to demonstrate the overall need for renewable or low carbon energy and also recognise that even small-scale projects provide a valuable contribution to cutting greenhouse gas emissions; and
- approve the application *(b) (unless material considerations indicate otherwise)* if its impacts are (or can be made) acceptable. Once suitable areas for renewable and

low carbon energy have been identified in plans, local planning authorities should also expect subsequent applications for commercial scale projects outside these areas to demonstrate that the proposed location meets the criteria used in identifying suitable areas.

2.5 It should be noted that the Council will encourage the energy efficiency of the property concerned has been improved to at least meet the relevant requirements at the time of submission before any renewable/low carbon solution to energy generation is installed. This is part of the wider principle for encouraging energy efficiency in buildings.

Planning Practice Guidance for Renewable and Low Carbon Energy

2.6 This practice guidance was published in July 2013, and replaces Planning for Renewable Energy: A Companion Guide to PPS22. It provides advice on the planning issues associated with the development of renewable energy.

2.7 The guidance covers the three key forms of renewable energy generation: hydropower, solar technology and wind turbines. It states that all communities have a responsibility to help increase the use and supply of green energy, but this does not automatically override environmental considerations.

2.8 Schemes should continue to be assessed on individual planning merits but local considerations such as topography, amenity and heritage value must be considered, the guidance says. It advises that the cumulative visual impact of schemes, particularly wind turbines, should also be a determining factor.

2.9 The guidance expects community-led renewable initiatives to play an increasingly important role and says these should be encouraged as a way of providing local benefits from renewable energy development.

Central Lancashire Core Strategy

2.10 The Central Lancashire Core Strategy (2012) forms part of the Local Development Framework, and sets out the direction and strategy for development and conservation to the year 2026 and beyond. The Core Strategy can be viewed at www.southribble.gov.uk.

Relevant policies include:

- Policy 16: Heritage Assets – a policy safeguarding and supporting the heritage assets within the borough, for example listed buildings.
- Policy 18: Green Infrastructure – a policy to safeguard, manage and enhance provision of green infrastructure across the borough, for example open spaces and parks.
- Policy 19: Areas of separation and major open space – a policy setting out large areas of open space/ areas separating built up areas to protect the identity and local distinctiveness of an area(s).
- Policy 20: Countryside management and access – a policy to continue to support the plans and proposals for key countryside access and management opportunities for example, Ribble Coast and Wetlands Regional Park.
- Policy 21: Landscape Character Areas – a policy that seeks to protect landscape character areas through conservation, enhancement and/or restoration.
- Policy 27: Sustainable Resources and New Development – a policy setting out targets for sustainable use of resources and sustainable development including targets for renewable energy generation, Code for Sustainable Homes and BREEAM.

- Policy 28: Renewable and low Carbon Energy schemes – a policy that discusses requirements when preparing a renewable or low carbon energy scheme.

2.11 Policy 27 and Policy 28 within the adopted Central Lancashire Core Strategy (2012) set out the strategic priorities for renewable and low carbon energy generation, of which this SPD seeks to provide additional guidance. Appendix 1 highlights two key evidence base documents in support of the strategic policies within the Central Lancashire Core Strategy.

South Ribble Site Allocations and Development Management DPD

2.12 Chapters G and J of South Ribble Borough Council's Site Allocations and Development Management Policies Plan document identify those relevant policies linked to renewable energy provision where applicants will be expected to consult with and take account of statutory bodies and local communities prior to submitting a planning application. The Site Allocations document can be read in full at www.southribble.gov.uk

2.13 Some applications for renewable or low carbon energy development, especially those on a larger scale such as large wind turbines, multiple turbines or anaerobic digestion plants will be categorised as 'significant developments', and as such applicants will be expected to carry out pre-application consultation, commensurate to the scale of the proposed development. For further guidance, applicants are encouraged to contact the planning department on 01772 625400.

2.14 The South Ribble Site Allocations and Development Policies Development Plan Document (DPD) sets out the policies and site allocations to deliver the Core Strategy. A Partial Version was endorsed at the Council meeting in November 2013, and is now in operation for development management purposes. The final document will be adopted once an updated Gypsy and Traveller Accommodation Assessment has been completed and additional hearings undertaken by the Planning Inspector. The Site Allocations Partial Version now carries significant weight in the planning process. The Local Plan (2000) will not be superseded until the Site Allocations Plan has been formally adopted; however it now carries only limited weight. Where contradictions exist between the two Plans, the Site Allocations Partial Version will now take precedent.

3. Why is renewable energy needed?

3.1 Climate change is one of the key challenges facing society today. There is evidence, freely available, to suggest that changes to the global climate and the finite supply of fossil fuels are likely to have profound effects on everyone in the future, if left unchecked. One of the reported principal ways in which the climate is affected is by the emission of greenhouse gases (eg carbon dioxide - CO_2) into the atmosphere. The generation of energy from the burning of fossil fuels (eg coal, oil, and gas) is a major emitter of CO_2. A switch to generating energy from renewable or low carbon sources will help tackle climate change through reducing CO_2 emissions.

3.2 The UK has legally binding targets to generate 15% of its energy needs from renewable sources by 2020. The UK Renewable Energy Strategy (DECC 2009) sets a target of 30% of electricity generated through renewable technologies compared to 5.5% today, and 12% of heat generation to be provided by renewable sources by 2020. In addition to an increase in renewable energy production, the UK is also committed to lowering emissions of greenhouse gases such as CO_2, through energy efficiency measures. The European Union Climate and Energy Package, formally agreed in 2009, commits the EU to achieving a 20% reduction in EU greenhouse gas emissions by 2020 compared to 1990 levels.

3.3 The vast majority of electricity consumed in the UK comes from fossil fuel power stations. Lancashire has one Nuclear Power station at Heysham but no fossil fuel power stations.

3.4 In 2010, gas and coal were the most important fuels used in electricity generation in the UK, with gas-fired generation accounting for 46.3%, and coal-fired 28.5% of total energy production. Next in line was electricity generated in nuclear power plants, which accounted for 16.4%. By 2010, the amount of power from renewables accounted for just 8.8%, with wind consisting of 2.7% of electricity generated from renewable energy sources (*http://www.world-nuclear.org/info/inf84.html).*

3.5 Fossil fuels are by their nature a finite resource and much of the fuel (coal, oil, and gas) used in the nations power stations is imported from overseas. There is an over reliance in the UK on fossil fuels and measures to reduce their consumption are not only beneficial in terms of reducing carbon emissions, but also in improving energy security.

3.6 To reach these targets and aspirations for a more secure, efficient and renewable based energy generation much of this will be met by macro technology developments such as wind, on and off-shore developments. Micro –renewable technologies in domestic or commercial settings, especially when combined with other energy efficiency measures can contribute to reducing carbon emissions and reaching renewable energy generation targets.

The ways in which housing can play its part in reducing carbon emissions are:

- Reducing the amount of energy used in the household (eg implementing energy efficiency measures such as increasing insulation, using more energy efficient appliances etc).
- Using energy from renewable or low carbon sources. This is expanded upon in the emerging South Ribble Site Allocations and Development Management Policies DPD (Chapter J), and the adopted Central Lancashire Core Strategy Policy 6.

3.7 It is, however, vital that when considering installing any renewable or low carbon energy measures, it can be demonstrated that energy efficiency has been increased beforehand in order to maximise the benefits. The best and easiest way to reduce carbon emissions is to reduce the energy that is used for example by increasing insulation, using low energy lighting, improving ventilation and improved draught proofing. Once this can be demonstrated by the applicant to the Council, alternative methods of energy generation can be considered or adopted. Installing renewable or low carbon technologies, especially in domestic or commercial property situations where the energy will be used directly, in combination with increased energy efficiency measures can maximise both the environmental and economic benefit.

4. What are renewable energy and low carbon technologies?

4.1 Renewable energy technologies produce energy from natural resources that will not run out. The most common technology is energy from wind (wind turbines), energy from the sun (solar panels), and energy from water (hydro-electricity). This document will outline the benefits, disadvantages of each type of technology and ascertain which technology may be more appropriate in which general area.

4.2 In addition to the above, there is also a growing sector of low and zero carbon technologies (LZCs). These do not use purely renewable sources but instead have very limited (or even zero) carbon emissions. Popular LZCs include biomass fuelled boilers and ground source heat pumps. LZCs often have a 'carbon cycle', i.e. burning wood pellets in a boiler which will emit carbon, which was absorbed by the tree during its life before it was cut down for fuel.

The trees currently being grown as fuel will absorb the equivalent amount of carbon, and so on. Other LZCs such as ground source heat pumps can emit carbon, as they require a small amount of power to operate the pump. However, this power could be from a renewable source thus its impact is minimal compared with traditional energy generation dependent upon fossil fuels.

Renewables and LZCs can be broadly split into two categories:

- Those that produce electricity; and
- Those that produce heat, either for water or space heating.

Examples of electricity producing technologies are:

- Photovoltaic solar panels;
- Wind turbines; and
- Hydro-electric turbines.

Examples of heat producing technologies are:

- Solar hot-water collectors;
- Ground source heat pumps;
- Water source heat pumps;
- Air source heat pumps;
- Biomass fuelled boilers;
- Biomass fuelled stoves; and
- Anaerobic digesters *(these can also produce electricity).*

4.3 Combined heat and power plants (CHP) can also be classed as low carbon energy sources. In traditional power stations, at least 50% of the energy from the fuel is wasted as lost heat. CHP plants use this heat to provide heating for the properties they serve. CHP plants are essentially small scale power stations, and can be fuelled by 'traditional' fossil fuels. They are 'low carbon' as a standard gas fired CHP plant can achieve a 35% reduction in fuel use compared with conventional power stations and gas boilers. CHP plants are difficult to retrofit into existing developments and as such are unlikely to become popular within the borough.

4.4 If you are considering installing any renewable or low carbon technologies you are strongly advised to take professional advice at the earliest possible stage. This can identify whether or not your site is suitable, and which technology would be most suited. It is also very important to maximise the energy efficiency of the property prior to installing any renewable or low carbon technologies.

5. Planning permission and domestic installations

5.1 At the time of writing, the need for planning permission varies depending on which technology you intend to install. All installations of renewable/ low carbon energy technologies outside the curtilage of domestic dwelling houses will require planning permission. Outlined below are the technologies which may require planning permission for domestic installations. It must be noted that you should **always** check with the Planning Department to find out if planning permission is required. The information on this page is for information only. If your property is listed or within or adjacent to a Conservation Area planning permission is likely to be required, please check with the Planning Department.

5.2 You are also advised to contact the Building Control Section regarding the installation of micro renewables under Building Regulations. See Table below.

Technology	Permission Required?
Wind turbines	Permission always required. *Other than when mounted in a building or within the curtilage of a dwelling house (subject to conditions).*
Solar PV or Thermal (domestic building mounted)	Permission may be required. Depends on position on building, location of building, and size of installation.
Solar PV or Thermal (domestic free standing)	Permission may be required. Depends on position of installation, and size.
Ground source heat pump	Permission not required if in the curtilage of a dwelling house (any additional buildings required to house equipment may require permission).
Water source heat pump	Permission not required if in the curtilage of a dwelling house (any additional buildings required to house equipment may require permission).
Air source heat pump	Permission always required.
Flue for a biomass heating system (domestic)	Permission may be required. Depends on location of building and size and position of flue.
Hydroelectric turbine	Permission always required.

5.3 If planning permission is required, the council offers a 'Pre Application Advice' service. A guide as to the likelihood of planning permission being granted can be given, and potential issues regarding the proposal can often be rectified prior to the planning application being submitted. There is a fee for this advice. The council would also encourage anyone applying for planning permission to provide as much information as possible on sizes, where renewable technology is to be installed, photos etc.

6. Planning Constraints

6.1 There are numerous planning constraints that will affect the suitability of the various renewable/low carbon energy technologies. The list below gives a summary of some of the principle and best known technologies and constraints. Please note that constraints are not mutually exclusive, eg a building can be listed, as well as in a conservation area which also happens to be in the Green Belt. More than one constraint is possible. There are less common constraints that may also be applicable which is why the advice always recommends seeking pre-application advice from the Development Management Team before submitting a formal planning application.

6.2 Large areas of South Ribble are covered by designations including Green Belt, Sites of Special Scientific Interest (SSSIs) and a SPA/Ramsar site at the Ribble and Alt Estuaries. Alongside these constraints are a number of statutory designations that may also impact on whether certain renewable and low carbon energy technologies are appropriate:

- *Three sites of Special Scientific interest (SSSI)*
- *Numerous internationally and nationally important wildlife habitats.*
- *Eight Conservation Areas.*
- *Approximately 145 Listed Buildings.*
- *The Ribble and Alt Estuaries SPA and RAMSAR site.*
- *Several areas of separation and green corridors including a central park are*
- *66 Biological Heritage site*

- *Four Scheduled Ancient Monuments.*
- *Two Registered Historic Parks and Gardens.*
- *Large areas of designated Green Belt.*
- *Local designations for wildlife protection including Sites of Importance for Nature Conservation (SINCs) and Local Nature Reserves (LNRs).*
- *Landscape Character Areas.*
- *Green Infrastructure and Open Spaces.*

6.3 Wind Turbines for example, due to their scale, appearance and the fact that they introduce a moving feature, are likely to have the most significant impact on the landscape, whereas a ground source heat pump for example, if installed properly, should have no landscape impact.

Table: General suitability within South Ribble of each technology: **Total height including blade.*

Technology	Potential Landscape Issues	Suitability
Large scale wind (75m+) *	High landscape impact	Not
Medium scale wind (25 – 75m)*	High landscape impact	Not usually suitable in rural locations/landscape character areas/open space
Small scale wind (<25m)*	Some landscape impact in landscape character areas/open space/rural locations	Sometimes suitable dependant on siting and urban/rural location
Micro Wind (<15m)	Some landscape impact in landscape character areas/open space/rural locations	Sometimes suitable dependant on siting and urban/rural location
Solar 'farm'	High landscape impact	Not
Solar 'farm'	Medium landscape impact	Sometimes suitable dependant on siting
Solar – building mounted	Limited landscape impact	Sometimes suitable
Solar – small scale free standing	Limited landscape impact	Sometimes suitable dependent on siting
Ground source heat pumps	No landscape impact	Yes
Water source heat pumps	No landscape impact	Yes
Air source heat pumps	No landscape impact	Yes
Biomass boilers	No landscape impact	Need to consider flues
Anaerobic digester (small scale)	Limited landscape impact	Sometimes suitable dependent on siting
Anaerobic digester (large scale)	High landscape and infrastructure impact	Not
Hydro-electricity	Limited landscape impact	Sometimes suitable dependant on siting

6.4 The table gives a broad perspective of the likelihood of the acceptability of each type of technology in terms of landscape impact. The individual impacts of each installation, including such issues as the effect on neighbouring properties from factors such as noise will still need to be considered. In certain instances, some of the technologies indicated in the table may still prove to be unsuitable.

6.5 However, what the table does show is that there are considerable opportunities for renewable/low carbon energy development within South Ribble.

Renewable energy capacity statistics for Lancashire are sourced from: http://media.claspinfo.org.ccc.cdn.faelix.net/sites/default/files/LCC%20-%20Renewable%20Energy%20Targets%20-%20FINAL%20.pdf
Statistics for South Ribble are:
Potential Resource Capacity by 2030:
Electricity – 309MW
Heat – 281MW
Total – 589MW

6.6 In 2011, 1MW of renewable energy was installed in South Ribble. Total deployable potential by 2020 is 32MW, with a total deployable potential by 2030 is 51MW.

6.7 There are already numerous examples of renewable/low carbon technologies present, including wind turbines, proving that they can be sensitively located. However, a balance must be achieved between delivering opportunities for renewable/low carbon energy, and protecting the special character of the landscape.

Listed Buildings

6.8 Listed buildings are categorised as Grade I, Grade II* and Grade II. The grade depends on their quality and importance, with Grade I being the highest level. There are approximately 500,000 listed buildings in England, of which about 145 are in the South Ribble Borough. The figures are approximate as a 'listing' often covers more than one building. The list includes buildings such as houses and churches yet also bridges, mileposts, crosses, stocks, statues and follies as examples.

6.9 Listed buildings are protected to preserve their special historical features, the significance of the building and its setting. The degree of harm to the listed building would be assessed against the potential benefits to the scheme, as required in the NPPF. It should be noted that a listing, regardless of grade, covers all parts of the building, inside as well as outside. The setting of a listed building will vary with each example, but will usually include its immediate surroundings and how it relates to and interacts with them.

6.10 Although renewable/low carbon energy technologies are obviously new features that have the potential to be visually somewhat at odds with the rest of the building; this does not mean that it is impossible to install them in listed buildings.

6.11 Listed Building Consent will always be required for any proposal that would affect the character of a listed building, regardless of whether or not planning permission is required. In some circumstances both listed building consent and planning permission will be required. However, provided great care is taken to ensure that the renewable/low carbon energy technology and any associated equipment can be installed without harming the building or its setting, consent may be given. Consent may also be given if the applicant can demonstrate the harm to the listed building is outweighed by the benefits of the scheme proposed.

Conservation Areas

6.12 There are several conservation and heritage assets in South Ribble. Conservation areas are designated to preserve and enhance the special architectural and historic interest of an area. In such areas, there are limitations to the 'permitted development rights' for the installation of

renewable/low carbon energy technologies. When installing technologies, great care should be taken to ensure that the character of the area is not undermined. However, as with other 'constraints', there are significant opportunities to install renewables in conservation areas, provided they are designed and sited in an appropriate manner. A full list of the conservation areas in South Ribble are contained within the Site Allocations DPD.

6.13 Each conservation area has undergone its own 'Conservation Area Appraisal'. These were prepared in consultation with the local community and set out the conservation area's key characteristics and features, and guidelines for its future management.

The Green Belt and Green Infrastructure

6.14 Much of the land to the west of Leyland and Penwortham and north east of Walton le Dale is designated as Green Belt. Other pockets of land are designated as Green Infrastructure such as the Central Park area and Green Corridors included in the Site Allocations DPD. Green Belt land is designated to protect its' 'openness' whereas Green Infrastructure ensures the 'open' feel of the urban/semi-urban areas of the borough. Renewable energy developments, and especially wind turbines, are classified as inappropriate development in these areas, and there must be very special circumstances as to why they should be allowed. The onus is therefore on applicants to justify and evidence why such developments should be permitted. The associated benefits of the production of renewable energy may be considered sufficient justification, but these should be quantifiable and evidenced.

6.15 For individual domestic dwellings some technologies may be considered 'permitted development' in the Green Belt, and those that do need planning permission, if suitably justified and sited may be granted consent.

Protected Wildlife Sites

6.16 Special Protection Areas (SPAs) are designated under the EC Birds Directive (79/409/EEC). Within South Ribble, the only designated SPA is the 'The Ribble and Alt Estuaries'. This area extends to the west of the Borough, and forms part of a network of wildlife sites across Europe called 'Natura 2000'. The area covered is the western part of the district and comprises mainly the Western Parishes area. The council has an obligation to promote conservation of the land, and to take steps to prevent deterioration of the habitats and species for which the area has been designated. Any development within or near to these areas requires a statutory consultation with Natural England, and may also require a Habitat Regulations Assessment under the European Habitats Directive. Any development that is likely to have an adverse impact on an SPA will not be permitted unless appropriate mitigation can be achieved and agreed with Natural England. In line with Policy 22 of the Central Lancashire Core Strategy (July 2012), any development that is likely to have a significant negative impact on the integrity of a 'Natura 2000' site will require an Appropriate Assessment (as required by the European Habitats Directive).

Other Protected Wildlife Sites

6.17 There are numerous other protected wildlife sites in the Borough. These are Sites of Special Scientific Interest (SSSIs), Regional Important Geological Sites (RIGS) and Local Nature Reserves (LNRs). These have been designated due to their national or local importance, and again proposals that are likely to have an adverse effect on them are likely to be recommended for refusal.

Other Constraints

6.18 Whilst the list above outlines some of the principal planning constraints affecting renewable/low carbon energy development, there are various other statutory and non-statutory constraints that may apply to your site. These range from the distance to a neighbouring property, the site being located in a flood risk area, the effects of noise, shadow flicker and interference with lone of sight and radar as well as other aeronautical equipment.

Summary

6.19 There are many factors that need to be considered when assessing the suitability of renewable/low carbon energy developments. Some of these will have a greater effect than others, but many can be overcome. Sensitive siting and design of installations is vital, especially in more constrained areas. It is important to consider the feasibility of the technology and cost in terms of payback, and that there may be other ways of improving efficiency such as insulation.

6.20 Despite the very special qualities of much of South Ribble, and the subsequent constraints on development, there is still potential for the installation of small scale renewable/low carbon energy technologies. None of the constraints is a definite block on development, but many will require further actions by the applicant, or additional information may be required to be submitted.

7. Wind Turbines

7.1 Wind turbines are devices that produce electricity by harnessing the power of the wind. Wind turbines usually feature three blades mounted on a tower, with the height of the tower being approximately twice the length of the blade. The blades are connected to the tower via a 'hub', where the gearing and turbine mechanism is housed.

7.2 Modern wind turbines now commonly fit into two categories: large scale commercial wind turbines, and small scale 'micro-generation' turbines.

Large scale wind turbines

7.3 Large scale turbines usually feature towers of up to 75m in height, with blade lengths of up to 40m, giving overall heights in excess of 100m. Each turbine can produce in excess of 2MW of electricity, with this figure likely to increase as technology improves. Turbines of this scale are normally installed as part of a 'wind farm' development where suitable terrain and wind activity can be established. Large scale turbines produce electricity that feeds directly into the national grid in much the same way as a power station does.

7.4 The formation of a wind farm requires planning permission, and this can be a lengthy process; detailed pre-application discussions will need to take place and an Environmental Impact Assessment (EIA) will need to be undertaken by the developer. In addition to the turbines themselves, significant infrastructure development is also required. This often involves the formation of access such as roads/tracks to and within the site which are capable of accommodating the large vehicles involved in delivery and construction, temporary compound areas, concrete foundation 'pads' for each turbine, transformer buildings and works to a local electricity supply network.

7.5 It is expected that any proposals for large scale wind farm developments will be submitted by commercial developers with expertise in the field and knowledge of the planning system in relation to energy development. Such developments will inevitably involve significant discussions with the Council prior to any application being submitted to assess the potential acceptability of any scheme and the complex array of factors that will be relevant. As such the scope of this SPD is not designed to cover such proposals. However, the potential for

large scale developments is compromised in South Ribble because of the limitation of wind speeds and proximity to settlements*. *(*Reference: Opportunities for Renewable Energy in the Borough Report June 2010).*

Micro-generation and small/medium scale wind turbines

7.6 Micro-generation and small scale turbines are the type most commonly installed by householders, whereas businesses will look to medium scale. These commonly feature towers of between 10m and 25m in height, with blade length of between 5m and 15m. Such systems can produce up to 50kW* of electricity and are certificated under the Micro-generation Certification Scheme (MCS). Turbines of this scale are usually installed individually and can either be 'stand-alone' or 'grid connected'. Stand-alone systems are usually only used where it is unfeasible to connect to the national grid, such as in remote rural areas. (**Information from CLASP).*

7.7 In South Ribble, the majority of small/medium scale wind turbines are likely to be grid connected. Such installations are used in conjunction with power from the grid, but can reduce the amount of power taken from the grid. If an excess of electricity is generated from the wind turbine, this can also be exported to the grid and the owner of the turbine or by arrangement the local community can receive benefit for this.

7.8 As well as tower mounted turbines; roof or small mounted turbines are also available. These are much smaller, with a blade diameter of 1-1.5m, and produce in the region of 1KW of electricity. However, various tests have shown them not to be as efficient as tower mounted turbines, and that they can also result in problems to the structure of the building on which they are mounted.

7.9 It should be noted that wind turbines, regardless of their design are often not suitable in urban areas and/or any green space within those urban areas due to the separation distance required. In order for a turbine to operate efficiently it needs a 'clean' flow of air. Buildings create a great deal of turbulence and 'wind shear' that hampers the electricity generation capacity of the turbine. Turbines also generate noise and in some cases shadow-flicker, and in an urban area it is likely that a turbine would be too close to other properties to be considered acceptable.

The planning issues

7.10 Although wind turbines can be beneficial to some aspects of the environment through their ability to generate renewable energy there are also other negative considerations that need to be taken on board. A wind turbine is probably the most visually intrusive of all renewable energy technologies, mainly due to its height and movement of its blades. The siting of any wind turbine should be carefully chosen to minimise the impact on the landscape. This is especially important on the Central Lancashire Plain to the West of the Borough and all areas of ecological importance such as ecological networks, Local Nature Reserves (LNR's), SSSIs, Biological Heritage Sites etc.

7.11 Choosing an appropriate siting can be hard as the need to minimise the impact on the landscape is often difficult to reconcile with the need to ensure an uninterrupted flow of wind to the turbine. In order for a wind turbine to operate efficiently, it will need an average wind speed at the hub; in South Ribble the average wind speed is indicated to be between 4-6 mps*. The flow of wind to the turbine should be free from obstructions such as trees, buildings or hills in the prevailing wind direction to minimise turbulence. The problem arises as the best operational location for a wind turbine may be on a ridge top, however this may be the worst location in terms of landscape impact. A balance needs to be achieved which may include siting a turbine against a backdrop of trees or a hillside, whilst still retaining an uninterrupted flow of wind. *(*Reference: Opportunities for Renewable Energy June 2010).*

Residential Amenity

7.12 Wind turbines have the potential to adversely affect the amenity of nearby residential properties.

7.13 In order to address such impacts, a separation distance may be necessary to provide a sufficient distance between a turbine and a residential property in order that the effects of visual intrusion, noise, shadow flicker etc are kept within acceptable levels. Such distances however do not currently form part of national planning law or policy. In the absence of national guidance this document provides a local recommendation for a 1000m separation distance.

7.14 This recommended separation distance may be varied, if a development can demonstrate that a lesser/greater distance would be appropriate depending on the sites location and characteristics, the size and number of turbines proposed, orientation of views, topography, noise issues, the presence of trees and natural features, the impact on the landscape. In effect the site specific circumstances will determine the separation distance.

Noise

7.15 The noise generated by wind turbines can have a detrimental effect on the properties nearby. The Council will seek to ensure that the amenities of nearby residents are not detrimentally affected in terms of noise disturbance.

7.16 In order to do this, the Council will normally require that the noise levels from the turbine do not exceed 35 dB(A) $L_{Aeq,\ 1min\ or\ 10s}$ at the nearest residential property[1] at any time. This is to be measured at all wind speeds from the cut-in wind speed of the turbine up to 12 m/s or the cut-out wind-speed[2] whichever is the lower. Applications must be submitted with adequate robust documentation detailing the noise levels at the nearest residential property, including an assessment of any tonal component, e.g the BWEA noise map.

7.17 If the predicted noise level from the turbine are to exceed the 35dB(A) $L_{Aeq,\ 1min\ or\ 10s}$ at the nearest dwelling, a full comprehensive background noise assessment will be required, in consultation with the Councils Environmental Health Team. Turbines would only be permitted in these locations if it can be shown that the background noise level[3] would not be materially affected by the noise generated from the turbine.

7.18 It is strongly recommended that applicants seek advice from the Council's Environmental Health team prior to submitting an application.

Aviation Interests and Radar Issues

7.19 Wind turbines may have an adverse impact on air traffic movement and safety. They may interfere with the proper operation of radar by limiting the capacity to handle air traffic, and aircraft instrument landing systems. There is a 15km consultation zone and a 30km advisory zone around every civilian air traffic radar, and there is a 15km consultation zone around Ministry of Defence aerodromes. Both Blackpool Airport and Warton Aerodrome fall within these consultation zones. It is strongly advised that they are consulted on any proposals prior to any application for a new wind turbine being submitted.

[1] Residential properties occupied by the owner of the proposed turbine can be subjected to noise levels up to 10dB(A) higher

[2] Windspeeds shall be referenced to a height of 10m.

[3] Background noise level will include the noise from any existing turbines.

7.20 Further information on aviation safety and wind turbines can be found on the Civil Aviation Authority Website, (www.caa.co.uk), and the National Air Control Transport Services Website (www.nats.co.uk).

Shadow Flicker

7.21 The term "shadow flicker" refers to the flickering effect caused when rotating wind turbine blades periodically cast shadows over neighbouring properties as they turn, through constrained openings such as windows. The magnitude of shadow flicker varies both spatially and temporally and depends on a number of environmental conditions coinciding at any particular point in time, including the position and height of the sun, wind speed, direction, cloudiness, and position of the turbine to sensitive receptor.

7.22 Shadow flicker is only likely to be a problem 130° either side of North, and within 10 rotor diameters.

7.23 We will require a full shadow flicker assessment for the life of the project, or for at least the first 25 years of the project, when there are any residential properties within 130° of north, and within 10 rotor diameters, of the proposed turbine. If there are no windows facing the direction of the turbine, this will not be required.

Greenbelt

7.24 Whilst wind turbines do have a relatively small footprint, they are distinct developments that harm the openness of the Greenbelt. The NPPF clearly states that the essential characteristics of the Greenbelt are its openness. Inappropriate developments, such as wind turbines, are harmful to the Greenbelt and will not be approved, except in very special circumstances. It would be up to the applicant to demonstrate these special circumstances at the time of the application.

What should I do if I wish to install a turbine?

Identifying a viable site:

- In Central Lancashire, some areas have the potential to deliver wind energy due to the overall average wind speed. However you should consult with a specialist company to see if your site is physically viable. A site with an uninterrupted flow of wind from the prevailing direction (usually SW) that is well away from other properties is possibly most suitable; and
- Due to the potential effects of wind turbines on aerospace technology such as radar, line of sight transmission and communications then pre-application discussions with the Ministry of Defence, Blackpool Airport and NATS must be carried out and appropriate correspondence/evidence submitted with any planning application.

Pre-Application

- If a physically viable site can be identified, you should then contact the planning department prior to submitting a planning application. A pre-application enquiry can identify the planning issues at an early stage, and where possible suggest remedies to any problems. The siting and its effect on the landscape are likely to be the greatest issues, which should be considered carefully. As a guide, avoid locations where there will be prolonged views of the turbine above the skyline. Consideration should also be made of transportation of the components of a turbine to the proposed site;
- From early 2014, it is anticipated that a new Government Policy will introduce the requirement for pre-application consultation with local communities. This requirement

will apply for any proposals for more than 2 turbines, or any turbine exceeding 15m in height. The Council's Statement of Community Involvement provides guidance on pre-application consultation;

- It is also important to contact the relevant electricity distribution company to ascertain if there are likely to be any issues in connecting the turbine to the grid.

Planning Application

- A planning application will be required in most cases. This will need to include detailed drawings of the wind turbine and its proposed siting. A viable economic and business justification for the turbine may also be submitted, to support the application. The turbine should comply with ETSU 97 guidance, and should have the appropriate certification complying with planning standards. A landscape assessment may be required, as well as a site specific noise report to demonstrate that there will be no harmful effects. The colour and finish of the turbine is also important, and suitability will vary from site to site;
- Wind turbines can also affect protected species such as Bats and Great Crested Newts. If a turbine is to be located near to the habitat of a protected species/habitat then a specialist report will also be required to show how the issues will be dealt with. Birds may also be affected by turbines, and further information and investigation may be required if the site is close to nesting sites or in the path of migratory birds;
- If a proposal is in or near to a SPA/Ramsar or SSSI an assessment against the Habitats Regulations/Environmental Impact Assessment is likely to be required;
- As with all renewable energy technologies, energy efficiency improvements in the property the turbine is to serve will maximise both the environmental and economic benefits and should be investigated fully before submitting an application for a wind turbine; and
- Before submitting a planning application you should refer to the Council's validation checklist available at the Civic Centre and on the website www.southribble.gov.uk .

7.25 Wind turbines have a finite life and, should planning permission be granted it will be subject to a condition requiring the turbine and the associated infrastructure to be decommissioned, removed and the site returned to its original state when not used for a period of six months or has come to the end of its function. A condition may also be added requiring certain colours and finishes of the mast, blades and hub but this will be specific to the turbine's location.

8. Heat pumps

8.1 Heat pumps work by 'transferring' heat from one place to another, rather than using fuel to produce heat. The source of heat can be air, the ground or water which is transferred through the pump to heat a building. Heat pumps can also be used in reverse to cool a building in summer. Listed below are the three main types of heat pump:

Ground and Water source heat pumps

8.2 Ground source heat pumps transfer heat from the ground to the building. They usually involve a series of pipes laid in a trench or borehole. These pipes are normally filled with a refrigerant or brine that is pumped around the pipes and absorbs heat from the surrounding ground. At a depth of 2m, the temperature is relatively constant; say 10°C, although this can vary dependent on location and altitude. The heat pump 'boosts' this low-grade heat to the temperature needed in the home. There is a power requirement for the pump itself, so this needs to be borne in mind when considering any potential environmental benefits.

8.3 Ground source heat pumps may not be suitable for every building. Most systems feature pipes laid in a trench, as trenches are often cheaper to dig than boreholes. For a trench

system, approximately 50-80m of pipe is needed per 1kW of output, or 10m of 'slinky' coiled pipe (about 7-8 kW is a typical size). Pipe diameter should be between 20 and 40cm to reduce the power required for pumping, but wide enough to establish a more efficient turbulent flow. The trench should be at least 2m deep and preferably in a wet or damp area. For a trench system a large amount of land is required, although the land can be returned to its previous use or be landscaped following installation of the pipes. A borehole system will need a smaller land area, but may be more expensive to install, and may not be suitable for every site. Obviously trenches and boreholes must avoid any underground services, and the underlying geology will also be a factor.

8.4 Water source heat pumps work in the same way as ground source heat pumps, but the pipes are sunken in a water source instead of the ground. The water body will need to be deep enough not to totally freeze in winter, be of sufficient size to accommodate the pipe work, and be in close proximity and at a similar level to the building to be heated. There are few properties and sites in South Ribble that could benefit. Water source heat pumps can also work by pumping natural water through a heat pump (such as from a natural spring), but again the same locational constraints apply. If the water source is a stream it may be possible to combine the heat pump with a micro hydro-electric turbine as well. You should contact the Environment Agency if you wish to install a water source heat pump in a river, and British Waterways (or its replacement) if the body of water has navigational rights.

8.5 If enough land (or water) is available, there are other issues with a heat pump. As they use electricity, in order to be environmentally beneficial and economically viable, the ground source heat pump must achieve a certain 'coefficient of performance' (COP). The COP of a system is affected by numerous factors, but incorporating energy efficiency measures into the building that will reduce the heating requirement is important, as is selecting a suitably sized system. Heat pumps can also contain up to 2kg of refrigerants (often hydro-fluorocarbons). These are very potent greenhouse gases, about 1600 times more powerful than CO_2, and great care should be taken to avoid leakages. Alternative systems that use brine instead of refrigerants are now relatively widely available.

8.6 Ground and water source heat pumps do not work well with traditional central heating systems that use standard radiators as they will not heat the water to a high enough temperature for the radiators to provide enough heat. They are most suitable for use with under-floor heating systems as they require lower water temperatures.

8.7 Accommodating the pump unit itself should also be factored in. These can vary in size but are often comparable to a domestic fridge-freezer. The pump is usually housed within the building that is heated to increase efficiency. Noise levels from pumps are low, but you should check the manufacturer's specifications for further details and the possible need for attenuation measures.

8.8 In terms of planning, the installation of a ground or water source heat pump is classed as an engineering operation. For domestic installations, planning consent will not normally be required if it is within the curtilage of a dwelling house as it is usually permitted development. Planning consent will however be required if it is outside the domestic curtilage, such as in an adjoining paddock or river. Installations for commercial premises will almost always require planning consent. In all instances you are advised to check with the planning department first if you are considering installing either a ground or water source heat pumping system.

8.9 There are, however, few reasons to refuse planning permission for a ground or water source heat pump. There is almost no impact on the landscape, the surrounding area, or on any other people. In certain circumstances there may be a special ecological or historical interest in the land that means excavation works are unsuitable. Also, should you wish to construct an extension to house the pump unit itself, this too may require planning permission, and must be designed to have minimal impact on the surrounding area.

Air source heat pumps:

8.10 Air source heat pumps usually work by transferring heat from the outside air to heat water for building heating. Air source heat pumps can also be used for cooling in much the same way as an air conditioner; however non-powered methods of ventilation are encouraged instead of those that use electricity.

8.11 Although usually cheaper to install than a ground or water source heat pump, and not subject to the same physical constraints (available land or water), air source heat pumps are not usually as efficient. This is because they draw heat from the surrounding air, the COP of air source heat pumps drops as outside temperatures fall, meaning that more electricity will be used to heat the building.

8.12 In terms of planning, most air source heat pumps require planning permission although some can be allowed as permitted development. Although they are relatively small and can be discreet additions to a building if appropriately sited, they do generate some noise. In domestic situations especially, this can be an issue. As such, any planning applications for an air source heat pump will be required to show evidence that noise will not be an issue.

9. Hydro Power

9.1 Hydro power has been used for centuries in Britain, and there are examples with permission in South Ribble at Samlesbury/Darwen Bottoms an Archimedes Screw scheme and at Roach Bridge a Water Mill. The principles of hydro power are simple. At its most basic form, water passes through some sort of turbine, which turns and produces electricity.

9.2 Hydro-electric schemes can be on a variety of scales, but larger schemes require a very large 'head' of water and a reliable water source. Most large scale schemes in Britain are found in Scotland, where dams release water from purpose built reservoirs. In the South Ribble, however, it is expected that any hydro-electric schemes in the future will be very small scale due to the terrain of the area being predominantly flat plains.

9.3 There can be substantial initial installation costs with hydro-electric power sources, however if installed correctly, unlike most other renewable sources they should produce electricity 24 hours a day, 365 days a year as they are only reliant on water flow. Ecological issues of fish and wildlife are of prime consideration and any impact on the flow of the water course used. Environment Agency input will be a requirement from an early stage. Maintenance requirements are low, but it is important that the intake for any turbine is kept clear of leaves and debris. It is possible to install automated systems to do this and due to the Feed in Tariff, they can be one of the most cost-effective ways of producing renewable energy in the long-term.

10. Solar Power

10.1 Although the UK is on the northern latitude, and Central Lancashire is in the northern part of the country, there is still significant potential for solar energy.

Solar power can be split into two distinct categories:

- Solar PV
- Solar hot water collectors, both types are discussed below.

Solar PV

10.2 Solar electricity systems capture the sun's energy using photovoltaic (PV) cells. The cells convert the sunlight into electricity, which can be used to run appliances and lighting.

Solar PV cells are usually attached to the roofs or walls of a building, but can also be free standing within a designated area i.e. Solar Farm. Solar PV cells can also take the form of roof tiles. Each cell is made of one of two layers of a semi conducting material, most commonly silicon. When sunlight shines on the cells it creates an electric field across the layers.

10.3 Solar cells do not need constant direct sunlight, and will still produce energy on even overcast days. However, the stronger the sunshine, the more electricity is produced. Similarly, the larger the area covered with solar cells, the more electricity is produced.

In order to operate most efficiently, solar PV cells should face as close to due south as possible to maximise the hours of sunlight they will receive during the day. In the UK it is recommended that panels should be mounted at an angle of about 30° to 40° from the horizontal although, practically, the existing roof pitch often governs the angle. Any siting chosen should be as free from shadow as possible. Trees, other buildings, chimneys, and even TV aerials can overshadow solar cells and reduce their efficiency.

10.4 Solar PV cells are heavy, and if mounted on a building, you must be sure that the roof or walls are capable of taking the extra weight.

Solar Hot Water Collectors

10.5 Solar hot water systems use energy from the sun to heat water. Basically, a thermal fluid (water and anti-freeze) is pumped through the solar collector and heated. This hot fluid runs through a coil inside an insulated hot water tank and heats the water inside it. The hot water is then stored in the insulated tank ready to be used. There are two main designs of collectors used in the UK.

These are either:

- Evacuated tube collectors, or
- Flat plate collectors.

10.6 The most common type is an evacuated tube collector. These feature a series of tubes, which due to their cylindrical design can receive direct sunlight for a longer proportion of the day as part of them will usually be pointing at the sun. However flat plate collectors are easier to maintain, protrude less from a roof, and are cheaper.

10.7 As with solar PV panels, solar hot water collectors ideally need to be installed on a south facing roof at an angle of around 30° to 40° from the horizontal for maximum efficiency. Any siting chosen should be as free from shadow as possible. Trees, other buildings, chimneys, and even TV aerials can overshadow solar cells and reduce their efficiency. Proximity to the hot water tank is important to minimise heat loss between the collector and the tank.

Planning issues

10.8 Domestic properties do not normally require planning approval for solar energy production provided they do not project more than 200mm from the roof or wall on which they are mounted. However, if the site is within a conservation area, a World Heritage Site, or is a Listed Building, permission may be required, and you are advised to contact the planning department on 01772 625400 for further advice.

10.9 Single free standing panels may also be permitted development provided that they meet certain size and siting requirements. Again, you are advised to contact the planning department for further advice.

10.10 In terms of visual impact, solar panels and collectors can be discrete additions to properties. It is preferable for them to be installed on the rear facing roof-slope; however the orientation of the property will necessarily dictate the siting.

11. Biomass

11.1 The majority of biomass heating in small scale installations comes from burning wood. At the simplest level, an open fire burning logs is a form of biomass heating. Biomass heating from the burning of wood is considered a low carbon source of energy, as the carbon released in its burning is equivalent to the carbon absorbed during the wood's life as a tree. Unlike coal, where the carbon has been absorbed over millions of years, the carbon in trees has only been absorbed over a few decades. If trees used as fuel are replanted as they are harvested, the use of wood as a fuel is almost carbon neutral.

11.2 It is not only wood that is used for fuel in biomass heating. The following list outlines the most common biomass fuels:

- Wood (either in natural form, or in processed pellets).
- Energy crops (eg oil seed rape, miscanthus).
- Animal waste.
- Other agricultural by-products (eg straw, grain husks).

Biomass heating is usually in two forms:

- Direct burning of fuel to produce heat.
- Anaerobic digestion, where the decay of organic matter produces heat, and potentially electricity.

In domestic situations biomass heating usually comes from the direct burning of wood in one (or a combination) of the following forms:

- An open fire.
- A wood burning stove.
- A wood fuel boiler.
- Larger wood boilers can be used in commercial / larger building situations.

Open fires

11.3 The large proportion of the heat produced by an open fire is lost up the chimney, and the rate at which oxygen is drawn into the fire can create draughts across the room, further reducing the fire's efficiency. An open fire will use considerably more fuel than other options. An open fire will require a working chimney, and if your property does not have one, planning permission may be required for its construction. Fuel burned on an open fire must be smokeless to comply with smokeless zone requirements in South Ribble.

Wood burning stoves

11.4 The term 'wood burning stove' covers a wide variety of appliances. At their simplest, wood burning stoves are metal boxes with a door in the front, and flue coming out of the top, and a

basic damper. More advanced stoves can feature sensors that monitor the amount of oxygen to maximise efficiency, and some pellet stoves can be hopper fed for ease of operation. It is also important to correctly size your stove for the room it will serve. Wood burning stoves require a flue. These can be routed up existing chimneys, or may be a new addition. If new, they may require planning permission depending on their size and location. Fuel burned on wood burning stoves must be smokeless to comply with smokeless zone requirements in South Ribble.

Wood fuelled boilers

11.5 Wood fuelled boilers are often fuelled by wood pellets. These are usually made from compressed sawdust or wood chippings, and due to lack of air and moisture in them, are a very efficient fuel. Modern pellet fuelled stoves are automatically fed, usually through a hopper arrangement. Hoppers can hold a significant amount of fuel, so do not need to be refilled that regularly. It is, however, important that there is enough space available to house the boiler and store the required fuel.

11.6 Larger boilers will obviously use more fuel, and will therefore need a larger space available for fuel storage. Delivery of stocks may involve large vehicles, so the site must have room for such vehicles to make deliveries.

Larger boilers in Commercial Premises

11.7 In commercial premises, larger biomass boilers can be appropriate to provide the energy required. The proposed Sainsbury site at Cop lane Penwortham includes a Biomass boiler to provide heating and hot water.

Planning issues

11.8 There are relatively few planning issues when installing small scale wood fuel appliances. The appliances themselves do not require planning permission, however flues may. If planning permission is required, flues can usually be designed and sited to have the minimum effect on the appearance of a building, and planning permission is often granted. The main issue will be the height of the flue.

11.9 For larger appliances, such as boilers used to heat commercial premises or large buildings, planning permission may be required. If the boiler is to be sited outside the building, or in a new building or extension, planning permission will be required for the associated building works. Planning permission would also be required if a new building was needed as a fuel store. If new buildings are required, they should be designed sensitively to complement the adjacent buildings and the surrounding area.

Anaerobic digestion

11.10 Anaerobic digestion is a process where micro-organisms break down biodegradable material in the absence of oxygen. This produces a gas, often referred to as biogas. This gas can either be used directly as fuel, or upgraded to bio methane, which again can be used as a fuel for either heating or vehicles. It is also possible to utilise the gas to drive a turbine to produce electricity.

11.11 It is outside the scope of this document to go into the science of exactly how anaerobic digesters work. However, at a basic level, biodegradable waste such as food waste, crops or animal waste is put into a tank where it is broken down in the absence of oxygen. The resultant gas (a mixture of methane and carbon dioxide) can then be used for heating or power generation.

11.12 In order to be most efficient, anaerobic digestion plants should be relatively close to their source of 'fuel'. For this reason, they can be suitable on farms, or close to existing land fill sites. Anaerobic digestion is best suited for use in combined heat and power systems (CHP). It is unlikely that any new large scale CHP plants will be constructed in the South Ribble area; however it may be possible for micro schemes to be installed.

11.13 Anaerobic digesters that are reliant on the importing of food waste would not be suitable in remote rural locations in the borough, as the waste would need to travel a considerable distance by road, and many of the smaller rural roads in South Ribble are not suitable for sustained journeys by large vehicles.

12. Conclusion

Before commissioning any renewable energy generation scheme it is advisable to contact the Planning Department to seek advice and to submit a pre-application for consideration.
Contact details:

Development Management Team
Planning Department
Civic Centre
West Paddock
Leyland
PR25 1DH

Tel: 01772 625400

Email: planning@southribble.gov.uk

Reference documents:

- South Ribble Borough Council Opportunities for Renewable Energy in the Borough – June 2010 www.southribble.gov.uk
- Lancashire Sustainable Energy Study – March 2011 www.sqw.co.uk
- CAA Policy and Guidelines on Wind Turbines – January 2012 www.caa.co.uk
- CAA – CAP764 and CAP670
- National Policy Statement for Renewable Energy Infrastructure EN-3 – July 2011 www.decc.gov.uk
- CLASP fact sheets
- Planning for Climate Change Coalition guidance for Local Authorities – April 2012 www.tcpa.org.uk
- Centre for Sustainable Energy Common Concerns about Wind Power – May 2011
- www.cse.org.uk
- National Planning Policy Framework - March 2012 www.communities.gov.uk
- NATS www.nats.co.uk
- SN/SC/4270 - House of Commons Library
- SN/SC/5221- House of Commons Library
- Renewable energy capacity statistics for Lancashire
- NPPF 2012
- NATS Information pack for Wind Turbine applicants www.nats.co.uk
- CLG - Planning Practice Guidance for Renewable and Low Carbon Energy

APPENDICES

APPENDIX 1 – Evidence base relating to the Central Lancashire Core Strategy and this SPD.

Directly related to Policy 28 of the Central Lancashire Core Strategy:

EB8 and 8a - Opportunities for Retail Energy in South Ribble (2010): provided evidence on the scope for wind; small scale hydro; landfill gas; anaerobic digestion; biomass; solar power; air source heating/cooling pumps; ground source heat pumps.

EB25 – Lancashire Sustainable Energy Study, South Ribble Renewable Energy Potential (2011): study by CLASP which:

- Quantified and mapped potential capacity by type of renewable energy.
- Calculated technical and deployable potential.
- Provided a starting point to help the Council identify opportunities to maximise renewable energy deployment