

Map 4: Landscape sensitivity and tranquillity

## 9.0 Overall Assessment based on Landscape Sensitivity

### Areas requiring the greatest constraint

9.1 The landscape sensitivity study has identified that there are only limited areas of countryside considered appropriate for wind energy development. Landscapes of increasing complexity but with some potential for wind energy have been mapped as having moderate sensitivity; these areas still contain constraining factors which would limit the size and scale of development. Areas of greatest constraint are mapped as having High Sensitivity and include:

- The Chilterns Area of Outstanding Natural Beauty (AONB)
- The Greensand Ridge
- River corridors – Ivel, Ouse, Flit and Ousel
- Areas of significant cultural heritage e.g. Parklands, farmland of historic interest and the settings of landmarks or special buildings.

9.2 The smaller scale and complexity of these landscapes is such that vertical features such as turbines would almost invariably be out of character.

9.3 Landscapes that are identified as being more sensitive to change have less capacity to accept wind energy. Sensitivity will vary depending on the location within the character area.

9.4 Tranquil landscapes: Central Bedfordshire is densely populated and has areas undergoing rapid change as a result of growth area pressures for housing and industry. The area has no truly remote countryside and yet there are locations close to the major towns that are appreciated for their tranquillity, are accessible and retain traditional features. It will be vital to conserve these areas from inappropriate development. These are arguably more precious than more extensive tranquil areas associated with open arable land.

### Landscape Sensitivity and Capacity

9.5 The study of landscape character has provided broad judgements about the acceptability of wind energy across each of the Evaluation Areas. To provide guidance on the appropriateness of different scales of development, comparative tables have been prepared which outline the scope or concerns associated with wind installations of increasing size.

9.6 The typology for the turbines used is as follows and assumes a maximum height of 120m (with the detailed analysis contained in Appendix 2).

- A single turbine
- Cluster of 1-3 turbines
- Medium scale wind farm e.g. 3-6 turbines
- Large scale wind farm e.g. 7-11 turbines

9.7 A wind farm has been defined as "large" for Central Bedfordshire if it contains 7 or more turbines. The Langford scheme was reduced from a possible 14 Turbines to 10, as the larger number was considered to great for the setting. The RES Wadlow Farm in Cambridgeshire has 13 turbines. The visual dominance of this scheme, which is set within a more extensive clayland landscape than can be found within Central Bedfordshire, also led to the view that it would be unlikely that schemes larger than 11 would be promoted or considered acceptable by the community.

9.8 The assessment of capacity has used the following approach:

**Scope:** Ability to accommodate development at this scale without significant adverse change to the landscape character and value.

**Moderate Capacity:** Some ability to accommodate development at this scale but some key sensitivities or value may limit the number of schemes possible.

**Low:** Could be challenging to locate turbines at this scale; more than one development at any scale may result in major adverse change to landscape character or cause an unacceptable decline in landscape value.

**Limited:** Could be challenging to locate turbines at this scale; more than one development at any scale may result in a major adverse change to landscape character or cause an unacceptable decline in landscape value.

**None:** The area would not be able to accommodate development at this scale without an unacceptable adverse change to landscape character and value.

Table 3: A summary of the assessment of the landscape capacity in Central Bedfordshire to accommodate wind developments of various sizes.

Evaluation Area	Single Turbine	Cluster 1-3 turbines	Medium Scale 3-6 turbines	Large Scale 7-11 turbines
Marston Vale	Low	Moderate	Low	Limited
Clay Valleys	Moderate	Low	Limited	None
East Claylands	Scope	Scope	Moderate	Low
Greensand	Low	Limited	None	None
Leighton Buzzard area	Moderate	Low	Limited	None
Clay Hills ,Vales	Moderate	Moderate	Low	None
North Chilterns	Low	Limited	None	None
South Chilterns	Low	Limited	None	None

## Opportunity Areas

9.9 The landscape sensitivity study has identified that there are only limited areas of countryside considered appropriate for wind energy without there being a significant loss of character and quality.

9.10 These areas are mapped as having **Low Sensitivity** (Map 4 on page 30), indicating that only the clay landscapes of the Marston Vale, east Bedfordshire and the southern clay vale are suitable.

9.11 The smaller scale and complexity of the landscape outside of the clay vales is such that tall features such as turbines would almost invariably be out of character. This reflects the findings of the regional study undertaken by ARUP.

9.12 When the study of Landscape Constraints (Map 3) and Tranquillity (Map 4) are also considered, it will be seen that there is a conflict between the area identified as having greatest tranquillity i.e. in the Eastern Claylands which otherwise is generally of low sensitivity.

9.13 This factor reduces the scope for either a large wind farm in this area or the permission of dispersed single turbines as both scenarios would detract from tranquillity. Central Bedfordshire has experienced a marked loss of tranquillity over recent years and peaceful countryside with open uncluttered views is a precious resource.

9.14 If considering only landscape grounds, the following areas are seen as having some potential for wind development as shown in detail in appendix 2:

- Land to the south and east of Biggleswade
- Marston Vale – minor scale only
- North Houghton Regis
- West of the A5 – minor scale only

9.15 The scale of development would be critical to acceptability as would satisfaction that the impacts on other sensitive receptors, such as biodiversity and local communities were mitigated to an acceptable level.

9.16 As with other renewable energy generation technologies, there is scope to develop wind energy in association with the Growth Areas identified in the Council's emerging Development Strategy, particularly in line with any future requirements placed on developers through the 'Allowable Solutions' mechanism.

9.17 Growth areas provide the opportunity for major new features to be integrated as part of major change and urbanisation. In addition, there are opportunities to associate turbines close to large scale industrial development such as business parks and major transport corridors if the landscape setting is appropriate.



9.18 This could include the following areas.

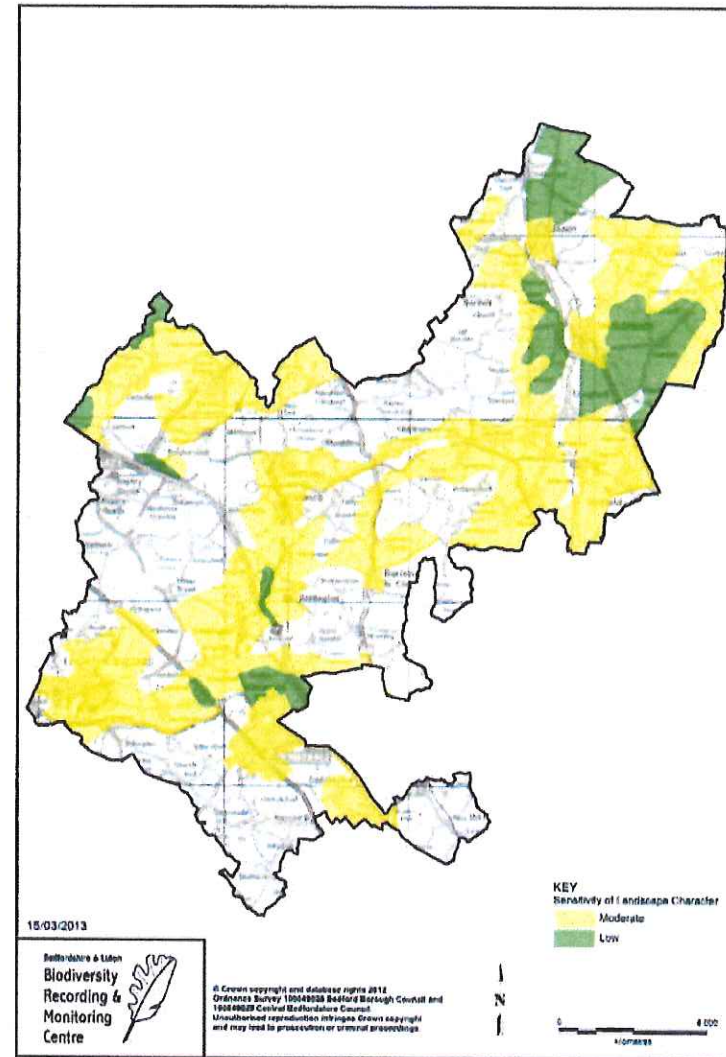
- North Houghton Regis growth area
- M1 and A1 corridor
- Arlesley – northern expansion area – minor scale only
- Stratton Business Park, Biggleswade.

### Creating a positive feature

9.19 A wind energy development is most likely to be seen as a positive feature if:

- It is positioned beyond the 2km zone from communities to avoid extreme dominance of the structures in the view.
- It is clearly visible and set on level ground, it is important to avoid sites where part of the column or tips of blades are visible on the skyline.
- Be in scale with the landscape and avoid conflict with the human scale of farms, residential properties and features such as woods and hedgerows.
- Ensure that impact on recreational enjoyment is minimised – this includes more passive recreation such as enjoyment of valued views and panoramas as well as use of rights of way.
- Avoids detracting from landform and sense of place, e.g. where there are subtle changes in level or where tall structures would conflict with dramatic changes in contour, for example between a vale and escarpment.

Map 5 shows areas of search based on low or moderate landscape impact



Map 5: Areas of search based on low or moderate landscape impact

## 10.0 Conclusions

- 10.1 The scale and movement of turbines will always result in dramatically changed landscapes. In an acceptable location the strong form and connection with green energy can result in the creation of a positive landmark and it is recognised that the installation of wind energy has a role in combating climate change, which is a key factor leading to the loss of valued features within the landscape.
- 10.2 However, in view of the visual impact, it is essential that schemes are in scale with the setting and do not detract from valued landscapes or cause unacceptable intrusion to communities.
- 10.3 Within Central Bedfordshire the dense settlement pattern and the variation in landscape character (character areas are often narrow or limited in extent) and landform creates a greater sensitivity than the judgements on landscape character alone might suggest. If not managed carefully this could give the prospect of certain areas being subject to disproportionate development.
- 10.4 The capacity for medium scale wind farms has been seen to be low. It is also concluded that the Central Bedfordshire landscape is not appropriate to accommodate large scale wind farms.
- 10.5 There is potential to support a limited extent of small-medium sized wind farms, particularly within the clay landscapes. Central Bedfordshire may also be able to accommodate a limited number of single turbines, although the visual impact of a single turbine can be considered disproportionate to the energy output.
- 10.6 The cumulative impact of a series of single turbines is considered to be of a greater consequence than a single, medium sized farm of 3-5 turbines. In Central Bedfordshire it will only be an exceptional site which would allow a second installation without a serious threat of overwhelming cumulative impact.
- 10.7 It is the Council's view that the Central Bedfordshire countryside is too populated, complex and varied in its landform to be able to successfully accommodate more than one medium or large farm within a 10km setting of another in a rural setting. However there are opportunities to link wind generation to the major growth areas.
- 10.8 It is only the large-scale arable clay-farmland landscapes which offer any potential for farms to be in close proximity. This landscape type is still very limited in extent to similar landscapes in other counties i.e. the Bedfordshire and Cambridgeshire Claylands and the East Anglian Chalk National Character Areas.
- 10.9 Where the installation of single turbines is concerned – there may be scope to accept more single turbines towards the east of the County or where they can be used positively to create nodal features along the trunk roads. A cluster of turbines may be more acceptable than three single turbines within a particular locality.

## 11.0 Landscape Assets

- 11.1 The Mid Bedfordshire and South Bedfordshire Landscape Character Assessments have provided objective descriptions of the character areas, which include identification of the key landscape character and visual sensitivities, allowing for an assessment of sensitivity for both issues.
- 11.2 Using the assessment of visual sensitivity as a baseline, further consideration has been given to the levels of constraint required to ensure the protection of important and valued attributes and so support the landscape strategy for each area. These include:
  - Conservation of the AONB and an effective buffer, to safeguard views. This will vary in the required extent dependant on location.
  - Conservation of the landscape and setting of Registered Parks and Gardens, including consideration of relic parklands.
  - Conserve the setting of ancient woodland and the amenity and integrity of distinctive habitat e.g. heathland, chalk downland and riverside pastures.
  - Conserve the skylines of the Greensand Ridge and Chalk Escarpments
  - Conserve setting of landmarks, particularly those of historic or cultural significance.
  - Conserve areas of recognised tranquillity.
- 11.3 These are shown on Map 6, however it should be noted that any buffer zones applied do not necessarily rule out wind developments in those areas. As with the assessment of landscape sensitivity and dictated by the NPPF and additional onus is placed on the developer put forward wind energy schemes that take account of the impact on the landscape asset and includes mitigation to keep this at a minimum.
- 11.4 It should also be recognised that many heritage and historical assets are not shown on the map, this is primarily because impact would need to be thoroughly explored on a case by case basis. More detail with regards to these is covered in section 12.



Factor	Single Turbine	Small 1-3	Medium 3-6	Large 7-11	Comment
<b>Development Nuclear villages on Ridge, historic Ampthill central to Ridge and Pitt Valley. Sandy, Ampthill and Filstock subject to growth.</b>	Historic villages often with strong vernacular character – highly sensitive to change. Some potential for single turbine linked to growth around Leighton Buzzard.	Historic villages often with strong vernacular character – highly sensitive to change. Limited potential for cluster of smaller turbines linked to growth around Leighton Buzzard.	Historic villages often with strong vernacular character – highly sensitive to change. Medium scale wind farm considered to conflict with settlement pattern across the Greensand.	Historic villages often with strong vernacular character – highly sensitive to change. Large scale wind farm considered to conflict with settlement pattern across the Greensand.	The sensitivity of the Ridge suggests that only turbines of lower height are appropriate, to help limit visual intrusion. This would also help create a clear hierarchy with the permitted turbines at Double Arches pit, Heath and Reach.
<b>Landmarks Cultural heritage – abbeys, mansions, including Houghton House ruins. Churches. Sandy transmitter.</b>	Essential that any turbine avoids conflict with the many cultural and ecologically important features on the Greensand.	Essential that any turbine avoids conflict with the many cultural and ecologically important features on the Greensand.	Essential that any turbine avoids conflict with the many cultural and ecologically important features on the Greensand.	Essential that any turbine avoids conflict with the many cultural and ecologically important features on the Greensand.	The visual unity of the Greensand Ridge is itself an extensive landmark. Great care must be taken to safeguard the undeveloped horizons which are such a valued characteristic.
<b>Tranquillity Majority of Ridge valued for peaceful recreational opportunities. Pitt Valley and urban fringe landscapes more disturbed.</b>	The structure and movement of any turbine will introduce conflict with this sensitive landscape.	The structure and movement of any turbine will introduce conflict with this sensitive landscape.	Would bring unacceptable intrusion. The structure and movement of a wind farm would conflict with this sensitive landscape.	Would bring unacceptable intrusion. The structure and movement of a wind farm would conflict with this sensitive landscape.	'Timeless' qualities of Estate landscapes a valued attribute. Tranquillity of Ridge can contrast with adjacent areas such as the Marston Vale and especially with city of Milton Keynes to west.
<b>Rarity Very unusual landscape type, only occurring here and on Isle of Wight.</b>	Limited extent of landscape character type a factor increasing its sensitivity and the requirement to conserve its integrity.	Limited extent of landscape character type a factor increasing its sensitivity and the requirement to conserve its integrity.	Limited extent of landscape character type a factor increasing its sensitivity and the requirement to conserve its integrity.	Limited extent of landscape character type a factor increasing its sensitivity and the requirement to conserve its integrity.	Ridge has strong visual relationship with adjoining character types and towns associated with it.

Leighton Buzzard Rural Fringe					
Factor	Single Turbine	Small 1-3	Medium 3-6	Large 7-11	Comment
<b>Scale – Medium scale field pattern with localised small scale landscape e.g. in Ousel Valley. Mineral workings at Leighton Buzzard increase scale.</b>	Some potential e.g. in arable landscape of associated with growth.	Low potential – would need to form positive feature associated with growth or trunk roads and of low height.	Limited potential – would need to form positive feature associated with growth or trunk roads and of low height. Important to avoid visual conflict with Greensand Ryges.	Not suitable – field pattern not extensive enough to accommodate a large farm, conflict with village scale.	Landscape varies across this area – open land in AS corridor and associated with mineral workings south of AS05.
<b>Landform Combination of undulating clay landscape north and west of Hookliffe and Greensand landscape north of Leighton Buzzard.</b>	Most potential on landform modified by mineral working or growth. Avoid conflict with Greensand Ridge.	Would need to be sited to avoid conflict with the Greensand and small scale of the Ousel and Clipstone valleys.	Limited potential. Conflict with the Greensand Ridge and small scale of the Ousel and Clipstone valleys.	Concern impact of wind turbines in vicinity of Greensand Ridge and small scale of the river valley landscape.	Landscape modified in places by mineral working – restoration enhancing habitat e.g. to heathland and increasing woodland cover. Important to avoid visual disruption to the Greensand Ridge.
<b>Land cover Arable farmland, extensive coniferous plantations, ancient woodland, heathland country parks.</b>	Scope if turbine does not conflict with traditional riverside landscapes, parkland or woodland blocks.	Low potential – would need to ensure farm does not conflict with traditional riverside landscapes, parkland or woodland blocks.	Low potential would need to ensure farm does not conflict with traditional riverside landscapes, parkland or woodland blocks.	Out of character and scale. Wind farm would dominate scale of features present.	Mineral restoration has created varied landscapes including lakes in Vale and created important recreational assets.
<b>Enclosure Mostly well contained – well managed hedges, plantations, more open to east of area.</b>	Same scope in more open areas, especially if linked to growth or road network.	Low potential to integrate a cluster without conflict with enclosure pattern.	Enclosure pattern limits scale of open land. Medium scale wind farm would contrast and dominate the surviving historic landscape.	Not suitable – enclosure pattern limits scale of open land. Large scale wind farm would contrast and dominate the historic landscape.	Views from Greensand Ridge critical – important to avoid open views of turbines. Some longer distance views from Billington and Tottenham and the Chilterns.
<b>Skyline Wooded skyline of Greensand Ridge at Heath and Reach. Locally important skyline at Hookliffe.</b>	Single turbine – concern about cumulative impact with large turbine at Double Arches.	Cluster of turbines has limited scope, in terms of conflict with Greensand skyline. Concern re cumulative impact with large turbine at Double Arches.	Medium wind farm would be highly conspicuous and dominate subtle skyline and skyline of Greensand Ridge. Concern re cumulative impact with large turbine at Double Arches.	Large wind farm would dominate subtle skyline and skyline of Greensand Ridge. Concern re cumulative impact with large turbine at Double Arches.	LCA emphasises need to keep undeveloped character of skylines – this includes avoiding development at foot of slope.
<b>Development Nuclear town of Leighton Buzzard which is subject to growth east. Clayland villages tend to be linear.</b>	Important to conserve integrity of historic villages. May be possible where linked to growth.	Important to conserve integrity of historic villages. May be possible where linked to growth.	A medium scale wind farm would need to avoid detracting from the setting of historic villages.	A large scale wind farm would dominate the setting of historic villages.	A settled landscape limiting scope. Association with growth or transport corridors may be possible but turbine height should be restricted to avoid conflict with sensitive settings.