Cheshire West and Chester Council

Landscape Sensitivity Study and Guidance on Wind and Solar Photovoltaic Developments

Final Report

March 2016

Final Report
by

and

for

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1. Introduction

Background and the need for the study

1.1 Cheshire West and Chester (CWaC) Borough Council has commissioned this study to help guide wind and solar photovoltaic energy proposals in the borough to those landscapes which are the least sensitive, and to avoid unacceptable impacts to landscape character.

1.2 Cheshire West and Chester Borough Council has a positive approach to renewable and low carbon energy development. The Council already has a planning document providing guidance on landscape sensitivity to wind turbine development (SPD4)[1] but this covers only the former Vale Royal Borough Council area (approximately 1/3 of the area of CWaC). This study extends SPD4 to cover the whole borough (including the former Chester District, Ellesmere Port and Neston Borough and Vale Royal Borough) in assessing landscape sensitivity to wind and ground mounted solar photovoltaic energy developments.

1.3 SPD4 was prepared and adopted in 2007 against the background of national, regional and local planning policy at that time but which has now changed. This study updates SPD4 in providing an evidence base to support detailed policies and land allocations in the emerging Local Plan (Part Two) (which in turn will support the strategic objectives and policies set out in the Local Plan (Part One) adopted by the council in January 2015). The current planning context for the study is outlined further in Section 2.

1.4 A low carbon and renewable energy study was completed for Cheshire West and Chester Council in 2012[2]. It provides a desk based technical assessment of the baseline energy demand and potential renewable energy resource for CWaC, including commercial-scale wind and microgeneration solar PV technologies (the latter refers to systems integrated into buildings and is not covered in this study as described in Section 5). That study concludes that commercial-scale wind (defined as 'medium' scale wind turbines typically 40m – 70m height to blade tip generating approximately 0.25 megawatts (MW) and 'large' scale wind turbines typically 80 – 150m height to blade tip generating between 2.5-3.0MW) has significant overall potential to generate energy in the borough. Broad "areas of least constraint" were identified for medium and large scale wind development using assessment parameters based on Department of Energy and Climate Change (DECC) methodology[3] but with some deviations. The process was essentially that of mapping areas of potential where wind turbines could be located by applying a series of constraints that limit the geographical scope for installing turbines. The broad areas of least constraint do not represent sites which are suitable, but general areas with few major constraints. In order for a developer to bring a site forward, detailed site specific assessment and a full planning application would be required accounting for a wide range of issues. Areas filtered out include

[1] Landscape Sensitivity and Wind Turbine Development, Supplementary Planning Document (SPD)4, Vale Royal Borough Council, September 2007
[2] Cheshire West & Chester Low Carbon and Renewable Energy Study, Verco, 2012
[3] Renewable and Low-carbon Energy Capacity Methodology for the English Regions, DECC, January 2010

areas with wind speed <5m/s, buffers around main roads, railways, residential properties, commercial properties, airports, airfields and MOD airbases, an exclusion zone around Jodrell Bank Observatory, MOD low fly zone, ancient woodland, sites of historic interest, international and national nature conservation and landscape designations. The resulting broad areas of least constraint are reproduced in **Figure 1**, illustrating the maximum possible technical potential for medium and large scale commercial wind development within the borough.

1.5 The 2012 low carbon and renewable energy study does not address landscape character sensitivity, local landscape and nature conservation designations, or cumulative landscape impact. It recommends that the Council prepares a planning policy that seeks to positively plan for the deployment of wind energy taking into account a number of further considerations and recommendations, including:

- While there is some potential for larger, commercial scale wind turbines the pattern of development is likely to be one of single turbines and small clusters, scattered rather than being grouped in a particular part of the borough.
- There are few opportunities for the development of large scale commercial wind farms in the borough due to the dispersed nature of the settlements and the need for a buffer between turbines and settlements.
- Those small pockets that have been identified as areas of least constraint for large scale wind development would need to be subject to further landscape analysis prior to identification as areas of search in a plan policy.
- There are only likely to be opportunities for small clusters of large scale wind turbines for much of the borough.
- The potential for medium scale wind turbines which do not require as large a buffer is greater in the borough and the evidence suggests that there are many opportunities for such schemes typically serving industrial, commercial or agricultural users or schools.
- Further landscape work would be needed to identify specific areas of search.
- Further assessment is needed to examine the extent of landscape constraints and to relate the identified opportunity areas with landscape character areas in order to provide more guidance on the scale of wind farms that may be appropriate in these general locations.
- Given that there are only a few limited areas where large commercial scale wind turbines may be located in the borough any future landscape analysis could focus on the sensitivity of these areas to large and medium scale wind development and assess the sensitivity of the remainder of the borough's landscapes to medium scale turbines only.

1.6 This sensitivity study addresses these issues by considering the sensitivity of landscape character areas within the borough to wind energy development.

1.7 Landscape character assessment and guidance within CWaC is provided by three separate documents that cover parts of the borough at different scales and at

different levels of detail[4]. A new Landscape Strategy provides an updated classification of the landscapes of the whole of CWaC[5] combining these documents and identifying the unique character of a range of contrasting landscapes across the borough (which often extend into adjoining areas as part of a wider regional landscape): from the prominent sandstone ridge running north-south down the spine of the borough; the flat lowland plain and extensive areas of farmland to the east and west; the heaths, meres, mosses and river valleys adding interest and diversity across the borough; and the marshland, mudflats and saltmarsh of the Mersey and Dee Estuaries to the north and west.

1.8 The new 2016 Landscape Strategy is used as the basis for this study in assessing the sensitivity of the sixteen landscape character types (which are generic and share common combinations of geology, topography, vegetation and human influences, e.g. *River Valleys*) and the 53 landscape character areas (which are single, discrete geographical areas of the landscape type with a unique 'sense of place', e.g. *Lower Weaver Valley*) to wind and solar photovoltaic energy proposals in the borough. **Figure 2** shows the updated landscape character types in the new 2016 Landscape Strategy.

1.9 Since the adoption of SPD4 almost ten years ago there have been significant technological advances in the wind energy industry. Throughout the UK the number of onshore wind farms and the size of individual wind turbines have increased substantially. The availability of larger turbines combined with an increase in their efficiency has meant that areas which were previously precluded from wind energy development are now seen as more attractive by the industry. Planning authorities more frequently have to consider applications for turbines within lower-lying more populated areas, with a trend for single or small groups of turbines, where design elements and cumulative landscape and visual impacts need to be carefully considered.

1.10 To date the main level of interest within CWaC for wind energy development has been focussed on small and medium sized developments comprising single or small groups of three or four turbines between approximately 10m-20m or 35m-55m height to blade tip. At the time of writing this report there were no large commercial-scale wind farms operational in the borough. A scheme comprising 4 x 125m ht. turbines had been dismissed at appeal, whilst a wind farm at Frodsham comprising 19 x 125m tall turbines had been allowed at appeal and construction had commenced. A negligible capacity of small scale wind energy exists, coming from three small turbines 9m, 15m and 18m tall, with another 15m tall turbine consented.

1.11 A number of small scale microgeneration solar PV systems integrated into buildings had been installed in the borough, under the Feed-in-Tariff scheme, but there were no ground mounted solar PV arrays. However, the previous two years had seen considerable interest in larger solar PV development with a number of screening and

[4] Chester District Landscape Assessment and Guidelines, 1998, Chester City Council;
Landscape Character Supplementary Planning Document 5, 2007, Vale Royal Borough Council;
Cheshire Landscape Character Assessment, 2008, Cheshire County Council
[5] A Landscape Strategy for Cheshire West and Chester Borough, February 2016

scoping opinion requests and applications for a wide range of solar arrays covering typically between <1ha to 35ha. A screening request had been made for an 86ha solar farm in 2013.

1.12 Given this level of interest and pressure for wind turbine and ground mounted solar PV development in the borough, there is a need for an appropriate, transparent, robust evaluation framework that can provide the necessary landscape baseline for policy and decision making. The study will also help in the formulation of criteria against which specific proposals may be assessed in relation to landscape impact.

1.13 Since the adoption of SPD4 in 2007 a wide body of generic guidance has been produced on the landscape effects of on-shore wind farms, in particular from Scottish Natural Heritage (SNH)[6]. Useful overviews of wind farm characteristics and typical effects of wind turbines on the landscape are found in numerous documents including landscape and visual impact assessments submitted in connection with wind farm proposals and wind energy sensitivity and/or capacity studies throughout the UK. There is now a wide consensus as to the ways in which wind turbines affect the landscape. **Appendix A** provides an overview of key landscape characteristics and their general influence on wind energy development based on a review of available guidance and other sources[7] and the consultants own experience of undertaking on-shore wind energy landscape sensitivity and capacity studies. This has helped inform a methodology for this study as described in Section 3.

1.14 Ground mounted solar PV development comprises relatively new technology yet to be the subject of written guidance on how it may affect the landscape. A review of existing assessments on the landscape sensitivity to solar PV development[8] has informed the methodology for this study.

1.15 The study considers a range of wind turbine typologies (heights and groupings of turbines) and sizes of solar PV arrays considered most likely to come forward in CWaC, as discussed in more detail in Sections 4 and 5 respectively. It provides a strategic borough-wide assessment of the sensitivity of landscape character types throughout CWaC to wind and solar energy developments. The study also provides positive guidance to those seeking to install such developments by assisting in the identification of potentially suitable locations and the factors to be taken into consideration in siting and designing wind and solar development in the landscape.

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[6] For example:
Strategic Locational Guidance for Onshore Wind Farms, 2009;
Guidance on Spatial Planning for Onshore Wind Turbines – natural heritage considerations, 2015;
Siting and Designing Wind Farms in the Landscape, Version 1, 2009 & Version 2, 2014;
Siting and Design of Small Scale Wind Turbines of between 15 and 50m in Height, 2012;
Assessing the Cumulative Impact of On Shore Wind Energy Developments, 2012.

[7] Including SNH guidance, SPD4, and Cheshire East Landscape Sensitivity to Wind Energy Developments, May 2013

[8] For example:
Technical Paper E4(a) An Assessment of the Landscape Sensitivity to Onshore Wind and large Scale Solar Photovoltaic Development in Cornwall, Cornwall Council, January 2012

Study limitations

1.16 **It is important to note that this sensitivity study does not define the precise limit of wind energy or ground mounted solar PV development that can be accommodated within CWaC, but gives an indication of the relative sensitivity of the different landscape types to these types of development, as defined in the study. It should not be interpreted as a definitive statement that a particular landscape is suitable or not suitable for a particular type of development – this report is not a substitute for detailed landscape and visual impact assessment of local development proposals or as part of wider environmental impact assessment.**

1.17 **As discussed further in section 3, although the study helps direct development to less sensitive locations it does not imply that development will be acceptable. Even an area rated as low-moderate sensitivity will comprise some key characteristics that are sensitive to development. If a development would adversely affect key characteristics, or the scale of development would create a high magnitude of change, effects on the character and appearance of an area could potentially be significant even if that area is rated as low-moderate sensitivity.**

1.18 The study uses carefully defined criteria to assess sensitivity that inevitably involves a degree of professional judgement in evaluating sometimes competing and unequally weighted characteristics, or attributes. **Rigid interpretation of the findings should be avoided, paying particular attention to the descriptions of potential sensitivity to different scales of development and the associated broad generic guidance on the type of development that may or may not be acceptable in different locations**.

1.19 It is also important to recognise that this study only considers landscape character. Biodiversity and cultural heritage are taken into consideration only where they have an influence on landscape character. The Council will consider all other environmental factors, such as impact on the Green Belt and the agricultural quality of the land, for example, and all other relevant issues during land use planning deliberations.

1.20 Furthermore, assessment of the sensitivity to specific development types is made to compare landscapes within CWaC; it should not be read alongside or compared with other sensitivity and capacity studies. Nor does the study compare the advantages or disadvantages of wind energy in relation to solar energy or other renewable or low carbon energy sources.

1.21 It is acknowledged that individual perceptions and attitudes towards renewable energy developments, and in particular wind turbines, vary greatly. Contrasting positive and negative attitudes are common but the study takes an unbiased approach. Personal preferences of the consultants undertaking the study has had no bearing on its findings.

Format of the report

1.22 **Section 2** outlines the planning context for the study, with reference to national planning policy, local policy and plans and environmental impact assessment. **Section**

3 describes the general methodology used in the study for assessing sensitivity to both wind energy and solar PV developments. The assessment of sensitivity of landscape character types (LCT) and landscape character areas (LCA) to wind energy development is described in **Section 4**, and the assessment to solar PV development is described in **Section 5**. **Section 6** provides a summary of the sensitivity assessment of both wind energy and solar PV developments in the borough.

1.23 **Appendix A** provides a checklist of key landscape characteristics and general influence on wind energy. **Appendix B** provides general design guidance principles for new wind energy and ground mounted solar PV development to minimise impacts on the landscape. The guidance is aimed at council officers and councillors, developers, applicants, landowners and others with an interest in wind energy development within the borough. **Appendix C** provides a checklist for applicants to show how landscape character has been taken into account in the development process and that potential landscape and visual impacts of a proposed development have been fully addressed. **Prospective applicants should work through Appendix C prior to submitting a planning application.**

1.24 This report is accompanied by two separately bound technical appendices containing the completed assessment matrices of sensitivity of each of the 53 LCAs to, firstly, wind energy development, and secondly to solar PV development:

- **Supporting Technical Appendix on Sensitivity to Wind Energy**
- **Supporting Technical Appendix on Sensitivity to Solar PV Development**.

2. Planning Context

2.1 Planning policy for onshore wind and solar PV developments is contained in a number of documents. UK Government national policy is principally set out in the National Planning Policy Framework (NPPF)[9], the Overarching National Policy Statement for Energy and National Policy Statement for Renewable Energy Infrastructure,[10] and online National Planning Practice Guidance for Renewable and Low Carbon Energy.

2.2 Local policy is provided by the statutory development plan for the borough, principally the emerging local plan which is being developed in two parts; Local Plan (Part One) Strategic Polices (which was adopted by the borough council in January 2015) and the Local Plan (Part Two) Land Allocations and Detailed Policies.

2.3 The existing supplementary planning document providing guidance on landscape sensitivity to wind turbine development (SPD4) covers the former Vale Royal Borough Council area, as referred to above, and is a material consideration in local planning decision making.

National Planning Policy Framework

2.4 Two of the core land-use planning principles set out in the NPPF that should underpin plan-making and decision-taking are that planning should:

- *support the transition to a low carbon future in a changing climate, taking full account of flood risk and coastal change, and encourage the reuse of existing resources, including conversion of existing buildings, and encourage the use of renewable resources (for example, by the development of renewable energy);* and also
- *take account of the different roles and character of different areas, promoting the vitality of our main urban areas, protecting the Green Belts around them, recognising the intrinsic character and beauty of the countryside and supporting thriving rural communities within it*;

2.5 The NPPF makes it clear that renewable energy development is not normally considered appropriate development for Green Belt land. Developers will need to demonstrate very special circumstances if projects are to proceed within the Green Belt, which may include the wider environmental benefits associated with increased production of energy from renewable sources (NPPF para. 91).

2.6 The NPPF encourages local planning authorities to develop a strategy to promote renewable energy developments and identify suitable sites for them (NPPF para. 97).

[9] Department for Communities and Local Government (March 2012), National Planning Policy Framework.
[10] Department for Communities and Local Government (July 2011), Overarching National Policy Statement for Energy (EN-1) and National Policy Statement for Renewable Energy Infrastructure (EN-3).

2.7 At para. 98 the NPPF directs that when determining planning applications for renewable energy development, 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 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.*

2.8 The NPPF makes it clear that 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 Overarching National Policy Statement for Energy and the National Policy Statement for Renewable Energy Infrastructure, July 2011.

Overarching National Policy Statement for Energy and the National Policy Statement for Renewable Energy Infrastructure, July 2011.

2.9 The Overarching National Policy Statement for Energy (EN-1) sets out the Government's policy for delivery of major energy infrastructure. It recognises that onshore wind is the most well-established and currently the most economically viable source of renewable electricity available for future large-scale deployment in the UK. Potential benefits of energy infrastructure proposals are to be weighed against potential adverse impacts, including any long-term and cumulative adverse impacts, as well as any measures to avoid, reduce or compensate for any adverse impacts. Environmental, social and economic benefits and adverse impacts at national, regional and local levels need to be taken into account. Landscape and visual impacts are recognised as "generic impacts" that arise from the development of all types of energy infrastructure, but such effects will vary on a case by case basis according to the type of development, its location and the landscape setting of the proposed development.

2.10 The National Policy Statement for Renewable Energy Infrastructure (EN-3) sets out the general principles that should be applied in the assessment of development consent applications for onshore wind (as well as other renewable energy technologies). Section 2.7 of EN-3 covers onshore wind. Key considerations for site selection are explained in detail and include: predicted wind speed, proximity of site to dwellings, capacity of a site, access, grid connection issues, biodiversity and geological conservation, historic environment impacts, landscape and visual impact, noise and vibration, shadow flicker and traffic and transport issues.

2.11 With regard to landscape and visual impact, the National Policy Statement for Renewable Energy Infrastructure emphasises that modern onshore wind turbines that are used in commercial wind farms are large structures and there will always be significant landscape and visual effects from their construction and operation for a

number of kilometres around a site. It recommends that the arrangement of wind turbines should be carefully designed within a site to minimise effects on the landscape and visual amenity while meeting technical and operational siting requirements and other constraints.

Planning Practice Guidance for Renewable and Low Carbon Energy

2.12 In July 2013 the Government published 'Planning practice guidance for renewable and low carbon energy'[11]. This was replaced in March 2014 by online planning practice guidance on renewable and low carbon energy. The aim of this guidance was to make clear that the need for renewable energy did not automatically override environmental protections and the planning concerns of local communities. It provides guidance on how local planning authorities can identify suitable areas for renewable and low carbon energy, acknowledging that assessment of the impact of some types of technologies may change, for example as the size of wind turbines increases.

2.13 In considering impacts, the guidance suggests that assessments can use tools to identify where impacts are likely to be acceptable. For example, landscape character areas could form the basis for considering which technologies at which scale may be appropriate in different types of location.

2.14 Paragraph 10 states: "Identifying areas suitable for renewable energy in plans gives greater certainty as to where such development will be permitted. For example, where councils have identified suitable areas for onshore wind or large scale solar farms, they should not have to give permission outside those areas for speculative applications involving the same type of development when they judge the impact to be unacceptable".

2.15 The justification for imposing separation distances between turbines and residential property has been the subject of many discussions, for example at public inquiries. The guidance advises that local planning authorities should not rule out otherwise acceptable renewable energy developments through inflexible rules on buffer zones or separation distances. Other than when dealing with set-back distances for safety, distance of itself does not necessarily determine whether the impact of a proposal is unacceptable. Distance plays a part, but so does the local context including factors such as topography, the local environment and near-by land uses.

2.16 The guidance sets out particular planning considerations that relate to large scale ground mounted solar photovoltaic farms and wind turbines, as discussed further below.

National Planning Policy on Wind Energy Development

2.17 The planning process used to determine a wind turbine development depends on the size of the proposed development. Planning applications for renewable energy projects, including onshore wind, above 50 megawatts (MW) are treated as Nationally

[11] Department for Communities and Local Government (July 2013), Planning practice guidance for renewable and low carbon energy

Significant Infrastructure Projects (NSIPs), requiring "development consent" (rather than planning permission) under the rules provided for in the Planning Act 2008. The Planning Inspectorate makes a recommendation to the Secretary of State for Energy and Climate Change (in England and Wales) who makes a final determination in accordance with the NPPF, National Policy Statements on Energy and relevant local considerations including local plans. To date, there have been no approvals of onshore wind farms through the NSIP system in England. The new Conservative Government has indicated that onshore wind may be removed from the NSIP system, with the decision making power returned to local authorities[12].

2.18 Wind energy applications with a proposed electricity generating output of below 50MW are decided at the local authority level in England in accordance with the polices set out in the NPPF and following the procedure set out in the Town and Country Planning Act 1990 and the Town and Country Planning (Development Management Procedure) (England) Order 2015.

2.19 From 17 December 2013, pre-application consultation with local communities has become compulsory for the "more significant onshore wind applications" by virtue of the Town and Country Planning (Development Management Procedure and Section 62A Applications (England) (Amendment) Order 2013 (SI 2932). This is for onshore wind development involving more than 2 turbines or any turbine with a hub height exceeding 15 metres height.

2.20 In a written ministerial statement on 18 June 2015 the Government announced new considerations to be applied to proposed wind energy development so that "local people have the final say on wind farm applications" in line with the Conservative Party 2015 Manifesto pledge. 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 (whether a proposal has the backing of the affected local community is, according to the written statement, "a planning judgement for the local planning authority").

This is now enshrined in national planning practice guidance (see paragraph 2.24 below).

2.21 Building mounted small domestic wind turbines that do not exceed an overall height (including building, hub and blade) of 15 metres, and stand-alone small domestic wind turbines that do not exceed 11.1 metres in height, may not need planning permission

[12] In the Queen's speech, on 27 May 2015, an Energy Bill was announced, which (among other things) would remove onshore wind farms of over 50 megawatts in size from the nationally significant infrastructure project development consent regime.

under permitted development rights contained within the Town and Country Planning (General permitted Development) (England) Order 2015.

2.22 As mentioned above, online planning practice guidance on renewable and low carbon energy (March 2014) describes the particular planning considerations that relate to wind turbines, including guidance on how local planning authorities should assess impacts including cumulative landscape and visual impacts. Factors to consider in assessing impact on visual amenity include: establishing the area in which a proposed development may be visible, identifying key viewpoints, the people who experience the views and the nature of the views. In identifying impacts on landscape, considerations include: direct and indirect effects, cumulative impacts and temporary and permanent impacts. When assessing the significance of impacts a number of criteria should be considered including the sensitivity of the landscape and visual resource and the magnitude or size of the predicted change. Some landscapes may be more sensitive to certain types of change than others and it should not be assumed that a landscape character area deemed sensitive to one type of change cannot accommodate another type of change.

2.23 The guidance sets out the type of information to inform landscape and visual impact assessments of wind farm developments. This provides useful information for the local planning authority and prospective developers. The key considerations are included within the Checklist for Applicants in Appendix C.

2.24 The online planning practice guidance on renewable and low carbon energy has been updated to take account of the new planning considerations announced in the 18 June 2015 written ministerial statement (see paragraph 2.20 above).

2.25 In England there are no nationally-set minimum separation distances between wind turbines and housing and there are no proposals from Government to introduce them. The last Government's view was that distance alone did not necessarily determine whether the impact of a proposal is acceptable or not. It believed that distance played a part, but only alongside other factors specific to the local context, such as topography, the local environment and nearby land uses. [While there are no nationally-set minimum separation distances between wind turbines and housing in England, one council has successfully set guidelines for a minimum distance for its area in the Allerdale Borough Council Local Plan (adopted July 2014)].

2.26 The former Coalition Government temporarily expanded the planning appeals recovery criteria to allow the Secretary of State to take the final decision on onshore wind appeals. This expired in April 2015. The new Conservative Government (2015) has not yet said whether it plans to renew this power.

National Planning Policy on Ground Mounted Solar Photovoltaic Development

2.27 As mentioned above, online planning practice guidance on renewable and low carbon energy (March 2014) describes the particular planning considerations that relate to ground mounted solar photovoltaic development. The guidance acknowledges that the deployment of large-scale solar farms can have a negative impact on the rural

environment, particularly in very undulating landscapes. However, the visual impact of a well-planned and well-screened solar farm can be properly addressed within the landscape if planned sensitively.

2.28 Particular factors that should be considered include:

- encouraging the effective use of previously developed land, and if a proposal does involve greenfield land, that it allows for continued agricultural use and/or encourages biodiversity improvements around arrays;
- that solar farms are normally temporary structures and planning conditions can be used to ensure that the installations are removed when no longer in use and the land is restored to its previous use;
- the effect on landscape of glint and glare and on neighbouring uses and aircraft safety;
- the extent to which there may be additional impacts if solar arrays follow the daily movement of the sun;
- the need for, and impact of, security measures such as lights and fencing;
- great care should be taken to ensure heritage assets are conserved in a manner appropriate to their significance, including the impact of proposals on views important to their setting. As the significance of a heritage asset derives not only from its physical presence, but also from its setting, careful consideration should be given to the impact of large scale solar farms on such assets. Depending on their scale, design and prominence, a large scale solar farm within the setting of a heritage asset may cause substantial harm to the significance of the asset;
- the potential to mitigate landscape and visual impacts through, for example, screening with native hedges;
- the energy generating potential, which can vary for a number of reasons including, latitude and aspect.

2.29 The approach to assessing cumulative landscape and visual impact of large scale solar farms is likely to be the same as assessing the impact of wind turbines (see paragraph 2.22 above). However, in the case of ground-mounted solar panels it should be noted that with effective screening and appropriate land topography the area of a zone of visual influence could be zero.

Local Planning Policy

2.30 The Cheshire West and Chester Local Plan (Part One) Strategic Polices was adopted in January 2015. It provides the overall vision, strategic objectives, spatial strategy and strategic planning policies for the borough to 2030, informed by up-to-date background evidence documents on key aspects. The strategic objectives and policies will be supported by detailed policies within the emerging Cheshire West and Chester Local Plan (Part Two) Land Allocations and Detailed Policies Plan and further supporting documents, including this study, in due course.

2.31 Local Plan (Part One) Strategic Objective SO15 states the council will:

"*Take action on climate change by promoting energy efficiency and energy generation from low carbon and renewable resources".*

2.32 The vision and strategic objectives of the Local Plan have been set out in a spatial strategy that aims to ensure sustainable development of the borough, in accordance with the NPPF. STRAT 1 policy on Sustainable Development includes the following principle for approving proposals that are in accordance with relevant policies in the Local Plan (unless material considerations indicate otherwise):

> *"Mitigate and adapt to the effects of climate change, ensuring development makes the best use of opportunities for renewable energy use and generation".*

2.33 STRAT 11 policy on Infrastructure states that to ensure the delivery of infrastructure improvements, to secure the future of sustainable communities throughout Cheshire West and Chester, and meet the wider sustainability objectives of the borough, the Council will (amongst other things):

> *"Support the provision of appropriate new infrastructure, including schemes intended to mitigate and adapt to climate change and any cross boundary schemes necessary to deliver the priorities of the Local Plan where this will have no significant adverse impact upon recognised environmental assets".*

The explanation of the policy gives an indication of the types of infrastructure, facilities and services covered by the policy, including renewable energy sources such as decentralised renewable or low carbon energy installations.

2.34 Local Plan strategic policy ENV 7 Alternative Energy Supplies states that:

> *"The Local Plan will support renewable and low carbon energy proposals where there are no unacceptable impacts on:*
>
> - *Landscape, visual or residential amenity*
> - *Noise, air, water, highways or health*
> - *Biodiversity, the natural and historic environment*
> - *Radar, telecommunications or the safety of aircraft operations"*

The explanation of the policy refers to the 2012 Cheshire West and Chester Renewable and Low Carbon Energy Study (see paragraph 1.4 above) which highlights the majority of the borough's renewable and low carbon energy resources are likely to be used across the authority area in small, scattered developments, with few strategic large scale opportunities to require specific local targets or formal area designations. A criteria-based policy approach is considered to be an appropriate mechanism to manage these and other suitable large, small and community scale opportunities and supporting infrastructure that may come forward. Applicants are encouraged to refer to the study which identifies where some of Cheshire West and Chester's renewable and low carbon energy resources could be harnessed, noting that additional site

specific work may be required to fully understand the feasibility and policy acceptability of a proposal.

Environmental Impact Assessment

2.35 The process of environmental impact assessment is governed by the Town and Country Planning (Environmental Impact Assessment) Regulations 2011 as amended. These regulations apply EU Directive 2011/92/EU on "the assessment of the effects of certain public and private projects on the environment" (usually referred to as the EIA Directive) to the planning system in England.

2.36 The aim of Environmental Impact Assessment is to protect the environment by ensuring that a local planning authority when deciding whether to grant planning permission for a project, which is likely to have significant effects on the environment, does so in the full knowledge of the likely significant effects, and takes this into account in the decision making process. The regulations set out a procedure for identifying those projects which should be subject to an Environmental Impact Assessment, and for assessing, consulting and coming to a decision on those projects which are likely to have significant environmental effects.

2.37 The local planning authority (or the Secretary of State in the case of an appeal) should determine whether the project is of a type listed in Schedule 1 or Schedule 2 of the Regulations. An assessment is required for all Schedule 1 projects. If the project is listed in Schedule 2, the local planning authority should consider whether it is likely to have significant effects on the environment. When screening Schedule 2 projects, the local planning authority must take account of the selection criteria in Schedule 3 of the Regulations. Not all of the criteria will be relevant in every case. Each case should be considered on its own merits in a balanced way and authorities should retain the evidence to justify their decision.

2.38 Wind energy development is considered under Schedule 2, para 3(i) Installations for the harnessing of wind power for energy production (wind farms). In accordance with the thresholds and criteria relevant to para 3(i) development, if the development involves the installation of 2 turbines or the hub height of any turbine or height of any other structure exceeds 15 metres, the proposal needs to be screened by the local planning authority to determine whether significant effects are likely and hence whether an assessment is required.

2.39 Solar power development is considered under Schedule 2, para 3(a) Industrial installations for the production of electricity, steam and hot water. In accordance with the thresholds and criteria relevant to para 3(a) development, if the area of the development exceeds 0.5 hectare the proposal needs to be screened by the local planning authority to determine whether significant effects are likely and hence whether an assessment is required.

3. Methodology

Introduction to landscape sensitivity

3.1 The assessment follows current best practice methodology for judging sensitivity in accordance with the techniques and criteria described in The Countryside Agency's and Scottish Natural Heritage's joint Landscape Character Assessment Guidance for England and Scotland, 2002, and the associated Topic Paper 6[13].

3.2 The method developed for this study builds on current guidance and uses the consultant's considerable experience in undertaking landscape sensitivity and capacity assessments throughout England and Scotland. This follows a process of desk study review of published material, field work, evaluation of landscape character types and landscape character areas, generation and application of appropriate criteria to assess sensitivity, and the presentation of results by way of summary tables and mapping using a geographic information system (GIS).

3.3 The current national LCA guidance does not provide a definition of 'landscape sensitivity' although this is likely to be included in the emerging updated version. 'Landscape sensitivity' and 'landscape capacity' are terms that are often used to mean the same thing in landscape sensitivity and capacity studies. Care is needed in the way that 'landscape capacity' is used since it can imply the existence of an objectively defined threshold below which development is acceptable, and beyond which it is unacceptable. Rarely can such a threshold be defined with any accuracy, and thresholds will be dependent upon various considerations affecting sensitivity, policy and the need for renewable energy. **Consequently this study assesses the overall sensitivity of landscape character types within CWaC to wind energy and ground mounted solar PV developments and provides strategic guidance on siting and design without attempting to identify landscapes where thresholds of development may or may not be acceptable.**

3.4 *Landscape sensitivity* in this study refers to the extent to which a particular landscape character type or area is vulnerable to change due to potentially significant effects on its character, or overall change of landscape character type. Landscape sensitivity is a professional judgement reflecting the particular landscape characteristics and features of a given area, for example landscapes which are rare or unusual landscape types are likely to be more sensitive to change. Sensitivity is likely to vary according to the type and nature of change being proposed as discussed below in respect of wind energy and ground mounted solar PV developments.

3.5 Landscape sensitivity includes v*isual sensitivity* which refers to the extent to which views within, into and out of CWaC are vulnerable to changes in the appearance of the landscape as a result of wind energy and ground mounted solar PV development. **It should be noted that the visibility of a wind energy and solar PV development may**

[13] The Countryside Agency and Scottish Natural Heritage (2002); Landscape Character Assessment: Guidance for England and Scotland. Topic Paper 6 (2004): Techniques and Criteria for Judging Capacity and Sensitivity

extend over some considerable distance, covering many different landscape character areas and types. A development may therefore influence the character of adjacent areas, as well as the area in which the proposal lies.

3.6 Landscape sensitivity is an overall professional judgement that recognises that certain characteristics, or attributes, may have a stronger influence on landscape character than others and may be more sensitive to the type of development being considered. Furthermore, there may be apparent contradictions within a landscape character type or area, for example a landscape close to settlement and already influenced by built development (indicating lower sensitivity to new development) may also include smaller human-scale features such as historic field patterns, hedgerows and trees (indicating higher sensitivity to large wind turbines out of scale with the landscape, and large-scale solar farms that may necessitate the removal of such sensitive landscape features). However, smaller human-scale landscape features may help to screen small solar arrays, reducing sensitivity to this scale of development. These issues are brought out in the discussions on landscape sensitivity.

3.7 Judgements (rather than numerical scoring or weighting) on landscape sensitivity are made using the five-point scale shown in **Table 1**:

Table 1: Sensitivity Definitions

High sensitivity (H)	The key characteristics and qualities of the landscape are highly sensitive and are highly likely to be adversely affected by this type of development.
Moderate-High sensitivity (M-H)	The key characteristics and qualities of the landscape are sensitive and are likely to be adversely affected by this type of development.
Moderate sensitivity (M)	Some of the key characteristics and qualities of the landscape are sensitive to change brought about by this type of development.
Low-Moderate sensitivity (L-M)	The key characteristics and qualities of the landscape are less sensitive to change brought about by this type of development.
Low sensitivity (L)	The key characteristics and qualities of the landscape are robust and are less likely to be adversely affected by change brought about by this type of development.

Assessing landscape sensitivity

3.8 Criteria for assessing landscape sensitivity have been developed following a review of relevant landscape sensitivity studies[14] and the characteristics of the CWaC landscape from the new 2016 Landscape Strategy described in paragraphs 1.7 and 1.8.[15] The study assesses the relative sensitivity of each of the sixteen landscape character types identified in the new Landscape Strategy, by evaluating sensitivity of each of the 53

[14] Vale Royal Borough Council SPD 4, 2007;
Cheshire West & Chester Low Carbon and Renewable Energy Study, 2012;
Cheshire East: Landscape Sensitivity to Wind Energy Developments, 2013

[15] A Landscape Strategy for Cheshire West and Chester Borough, February 2016

landscape character areas within the Strategy to the principal of wind energy and ground mounted solar PV development (of any size) against each of the criteria. In this way the study picks up subtle differences in sensitivity between character areas in order to inform guidance where certain landscape character attributes may be more or less influenced by the type of developments being studied.

3.9 A matrix is used to record a standardised set of criteria to represent the key characteristic features of each landscape character area, which facilitates direct comparison with other character areas. For each criterion a five-point scale, or continuum, is used against which each landscape character area is assessed in terms of general sensitivity to wind energy development and ground mounted solar PV development. This is described further in Sections 4 and 5 respectively.

3.10 Numerical scoring of criteria is avoided (as recommended in current guidance[16]) since mathematically combining scores can suggest a spurious level of precision in the judgement. Rather than a simple sum of all the attributes within the matrix, professional judgement is used to decide the overall sensitivity of each landscape character area using the five-point scale defined in **Table 1**.This enables greater emphasis to be given to certain attributes where these have a particularly strong influence on landscape character, for example a prominent skyline.

3.11 The assessments of each landscape character area are brought together in summary tables. Overall sensitivity (using the same five-point scale) of each landscape character type to the different heights of turbine and size of solar arrays considered in the assessment is decided upon using professional judgement, the assessment discussed and summarised in tables to enable direct comparison between them. Colour coding within the summary tables reflects the different sensitivity levels within Table 1 and is repeated on GIS maps (at the back of this report) enabling easy cross-referencing.

3.12 **It is important to note that the sensitivity assessment is made on the basis of a complex interplay of different criteria, recognising that within a landscape character area (LCA) some criteria may have a greater influence on landscape character than other criteria. Although the study helps direct development to less sensitive locations, it does not imply that development will be acceptable. Even an area rated as low-moderate sensitivity will comprise some key characteristics that are sensitive to the type of development proposed and that might cause significant adverse effect. It is for each development proposal to show how the characteristics of a LCA, and the wider area where visual sensitivity extends beyond the LCA, have been taken into account in the siting, layout and design of a proposal, to help the council reach a decision on the scale of development, its magnitude of change and likely impact on the character and appearance of the area.**

3.13 In areas of high sensitivity, key characteristics are highly sensitive and the type of development assessed is highly likely to cause significant adverse effects. In these areas development restraint and landscape protection are recommended.

[16] Guidelines for Landscape and Visual Impact Assessment, Third Edition, 2013; The Landscape Institute and the Institute for Environmental Management and Assessment

Design guidance

3.14 General discussion and guidance on siting, layout and design of different scales of wind turbine development and ground mounted solar PV developments is provided for each landscape character type, referring to the sensitivity of key characteristics, qualities and features highlighted in the individual LCA assessment matrices. Guidance on wind development is provided in section 4 and guidance on solar PV development in section 5.

3.15 Appendix B provides general design guidance principles for new wind energy and ground mounted solar PV development to minimise impacts on the landscape. The guidance is aimed at council officers and councillors, developers, applicants, landowners and others with an interest in wind energy development within the borough.

3.16 With regard to wind energy development, particular emphasis is given to locations identified as broad “areas of least constraint” for medium and large scale wind development within the 2012 ‘Low carbon and renewable energy study’ (see paragraph 1.4).

3.17 Guidance is not considered relevant in those landscape character types assessed as being of high sensitivity as these are considered to have very low ability to absorb this particular development type without significant detriment to its key characteristics, likely to result in a significant change in character (and therefore recommended for restraint on such proposals).

4. Sensitivity to Wind Energy Development

Wind energy typologies

4.1 Wind turbine typologies (heights and groupings of turbines) included in this study are those considered most likely to come forward in CWaC. A review of planning applications and permissions over the past five years or so gives an indication of likely turbine heights and groupings as summarised in paragraph 1.10.

4.2 Consideration has also been given to wind energy typologies considered in other studies[17]. Various combinations of turbine heights and groups have been assessed in previous studies; however, these suggest that the landscape is highly sensitive to any grouping of 13 or more turbines and so larger groupings than this have been scoped out of this study.

4.3 The following wind energy typologies are considered in the study:

Turbine Groups:
Single turbine
Smaller group of up to 6 turbines
Larger group of 7 to 13 turbines

Turbine Heights (to blade tip):
Smaller turbine: approximately 10m-30m
Medium turbine: approximately 30m-80m
Larger turbine: approximately 80m-130m+

4.4 Smaller turbines are most commonly deployed as single free standing units supplying specific buildings or developments (e.g. farms, schools, small businesses, etc.) although they can also be connected to the national grid. Towards the upper end of this scale, the taller turbines can comprise a horizontal axis three blade rotor system, mounted on a steel mast. However, two blade horizontal turbines and vertical axis structures are more commonly used on smaller scale turbines towards the lower end of the scale. Building mounted small domestic wind turbines and other small stand-alone turbines with permitted development rights are not included in this study.

4.5 Medium and larger commercial-scale turbines use a horizontal axis three blade rotor system, mounted on a solid steel tower usually finished in a pale grey colour. The relative proportion of tower height and blade diameter can affect how a turbine is perceived in the landscape; typical proportions of a 125m tall turbine (maximum height to blade tip) are around 80m to the top of the tower with a blade diameter of 90m. Larger turbines and wind farms comprising several large turbines are significant developments. As well as the substantial vertical tower structure, nacelle and rotor

[17] Vale Royal Borough Council SPD 4, 2007;
Cheshire West & Chester Low Carbon and Renewable Energy Study, 2012;
Cheshire East: Landscape Sensitivity to Wind Energy Developments, 2013

blades, associated development often includes improvement works to access roads and on-site tracks, construction compounds and lay-down areas, borrow pits, concrete foundations and hard standings, cable trenches, substation and a control building, anemometer mast(s), fencing and gates.

4.6 It is helpful to compare the approximate heights of other features in the CWaC landscape to gain an impression of the scale of wind turbine developments and their potential impact in the landscape:

Two storey dwelling: 10m; Barnston Memorial Obelisk, Farndon: 17m; Large mature tree: 20m-30m; Electricity pylon: 25m-50m; St. John the Evangelist Church spire, Over, Winsford: 43m; St. Wilfrid's Church spire, Davenham: 55m; Jodrell Bank telescope: 90m; Typical industrial chimney: 175m.

Appendix B provides general guidance on designing wind turbines in the landscape.

Assessment criteria

4.7 In accordance with current best practice guidance described above, criteria have been carefully defined to ensure an appropriate assessment of the sensitivity of the landscape character types and landscape character areas in CWaC to wind turbine development. As described in Section 3, the 2016 Landscape Strategy is used as the basis for the assessment; the criteria closely reflect the key characteristics, sensitivities, qualities and value of each LCT and LCA as described in the Strategy.

4.8 A general understanding of how wind turbines can affect the landscape has also helped define the criteria. There is now a wide consensus as to the ways in which wind turbines affect the landscape, as discussed in paragraph 1.13. **Appendix A** provides an overview of key landscape characteristics and their general influence on wind energy development. Some of the key landscape effects of wind turbines are:

- The movement of rotor blades on top of tall vertical structures is quite unique, drawing attention to them and bringing additional impacts particularly in tranquil landscapes that other tall structures such as pylons do not;
- Uncoordinated blade movement of wind turbines in a group can create an un-cohesive, unbalanced appearance especially where blades appear to overlap;
- Turbine height should seek to compliment the landscape and be appropriate in scale. Even smaller turbines can appear large and dominate a landscape characterised by small-scale topography or a low density scattered settlement pattern or human-scale features such as traditional farm buildings, trees and hedgerows;

- Associated development such as road improvements and new access tracks can necessitate the removal of landscape features such as trees, hedgerows and ponds;
- Turbines and associated infrastructure can bring a perception of human influence in landscapes currently devoid of built development;
- Turbines can be overbearing on complex or intricate landforms, resulting in a confusing image;
- Simple, distinctive ridges and skylines can also be affected if turbines are too dominant, interrupt valued views and compete with other features in the landscape;
- It is important to note that the landscape and visual impacts of turbines are not directly proportional to their height;
- Mitigation is limited to siting and design considerations rather than other measures to reduce negative effects, especially of medium and large-scale turbines;
- The combined effects of a number of wind turbines, or turbines in conjunction with other developments, can create cumulative effects i.e. additional changes to the landscape and people's perceptions of it that could eventually change the character of the landscape. As yet there are few turbines in CWaC but the potentially high level of visibility and other potential impacts as the number of turbines increases means that cumulative effects may be more likely. This is an evolving area of practice and considerable effort has recently been devoted to addressing cumulative landscape and visual effects in guidance specifically on wind farms[18].

4.9 As described in Section 3, a matrix was developed with a standardised set of criteria to represent the key characteristic features of each LCA as recorded in the 2016 Landscape Strategy. The key characteristics most likely to be affected by wind energy development are recorded under five headings, as follows:

- Natural & physical attributes
- Cultural, heritage & historic attributes
- Built development & settlement pattern
- Perceptual & visual attributes
- Qualitative attributes

4.10 The characteristics recorded are defined in **Table 2** below:

Table 2: Definition of Criteria for Assessing Sensitivity to Wind Energy Development

NATURAL & PHYSICAL LANDSCAPE CRITERIA	
Landform	The shape, elevation and change in relief of the physical landscape, ranging from simple and consistent, such as the flat pastoral plain, to more rugged and dramatic such as rocky sandstone cliffs and outcrops, or steep valley sides.
Land cover pattern	The pattern of land uses within a landscape, from the continuous monoculture of large parts of the plain or plantation forests, to mosaic assemblages of small fields, hedgerows, ponds and woodlands. Landscape pattern is closely related to scale.

[18] Assessing the Cumulative Impact of On Shore Wind Energy Developments (2012), Scottish Natural Heritage

Scale	The relative size of landforms, ranging from the most intimate river valleys to extensive open plain, and, to a lesser extent, the relative scale of land cover patterns of fields, hedgerows and trees. Landscape scale is closely related to visibility and the extent of views, and how the landscape is experienced.
Enclosure	The way in which landforms enclose the landscape, or open out into other landscapes, is closely related to scale. Woodlands and forestry may also create enclosure.
CULTURAL, HERITAGE & HISTORIC CRITERIA	
Historic assets	Historic landscape character including the presence and influence of nationally designated or locally significant heritage assets on the landscape, for example Listed Buildings, Registered Parks and Gardens, historic field systems and features such as ridge and furrow, field ponds and unimproved land (but not buried archaeology).
Recreation	Evidence of recreational uses where landscape is important to its enjoyment, such as public rights of way (including long-distance routes), outdoor visitor facilities, and landscape-based tourist attractions.
BUILT DEVELOPMENT & SETTLEMENT PATTERN CRITERIA	
Built development	The relative presence or absence of built development in the landscape, or in adjacent landscapes where they affect character, including industrial or commercial buildings and infrastructure, transport routes and power lines, brownfield land, and vertical structures such as communications masts, pylons and chimneys.
Settlement	The pattern, scale and relative density of settlement, from unsettled or small scale, low density, strongly rural dispersed pattern of scattered villages, farms and cottages, to large scale, high density urban areas on the edge of an LCA where 20th century residential development has a significant effect on its character.
Human scale features	The scale of field pattern influenced by the relative presence or absence of traditional elements in the landscape such as sandstone walls, hedges, hedgerow trees and landscape-scale buildings that give a 'human scale' to the landscape.
PERCEPTUAL & VISUAL CRITERIA	
Skylines	Visual horizons can be simple i.e. relatively flat and featureless and not prominent, or more prominent and distinctive and/or complex with woodland, trees and other features. Undeveloped skylines are more sensitive than skylines where development is prominent, even if located in adjacent character areas.
Views and landmarks	Can include views from popular viewpoints, or views to landmark cultural buildings such as churches, and natural features such as ridges and hills, either within the same character area or beyond.
Intervisibility	Depending largely on enclosure, landscapes may be visible across a wide area, or may be secluded and difficult to see from beyond the area.
Visual receptors	The presence of visual receptors is indicated by settlement and by the popularity of areas used for recreational purposes, including public rights of way and the network of roads, canals and other transport corridors with large numbers of potential receptors.
Movement	Visible movement in the landscape may include vehicle traffic, aircraft, shipping, the movement of water, and moving structures such as existing wind turbines.
Tranquillity & remoteness	Tranquillity, an indication of the general level of human influence depending on factors such as noise and views to man-made features, with a perceived naturalness and rurality. Remote landscapes in the CWaC context are considered to be tranquil.
QUALITATIVE CRITERIA	
Scenic quality	The natural beauty and scenic quality of the landscape, which may or not be recognised by landscape designation, for example Area of Special County Value (ASCV).
Distinctiveness	The extent to which a landscape is representative of the Cheshire West and Chester landscape, or contributes to a local sense of place.
Rarity	The relative frequency of a landscape's general type, within Cheshire West and Chester.

4.11 As described in Section 3, for each criterion a five-point scale is used against which each landscape character area is assessed in terms of sensitivity to wind energy development. The five-point scale represents a gradual continuum (rather than a rigid scale with fixed points) from *low, low-moderate, moderate, moderate-high* and *high*, using the 2016 Landscape Strategy, fieldwork and professional judgement to decide the placement on the scale, and overall sensitivity to the general principle of wind energy development.

4.12 Examples of the matrices completed to assess sensitivity of LCA 1a: Delamere and LCA 1b: Allostock are given below. In these examples, LCA 1a: Delamere is assessed as having overall moderate-high sensitivity to the principle of wind energy development (of any size). LCA 1b: Allostock is assessed as having overall moderate sensitivity to the principle of wind energy development.

4.13 Completed matrices for all 53 LCAs are provided within a separate **Supporting Technical Appendix** to this main report.

4.14 **Table 3** following the example matrices below summarises the sensitivity of each LCA. This is also reproduced in the Supporting Technical Appendix on Sensitivity to Wind Energy.

4.15 As described in paragraph 3.11, overall sensitivity (using the same five-point scale) of each landscape character type to the different heights of turbine considered in the assessment is decided upon, using professional judgement. The assessment made is summarised in tables and discussed in terms of overall landscape character type sensitivity, referring to specific character area sensitivity where applicable and sensitivity to the different turbine groups considered in the assessment.

4.16 The landscape sensitivity assessments for each of the sixteen landscape character types (LCT) are given after Table 3. The assessments for each LCT follow the following format:

- A map illustrates the general location of the landscape character type and each landscape character area within the type;
- A summary table indicates key sensitivities of the LCT to key characteristics, recorded under the five headings from the 2016 Landscape Strategy;
- A table provides the sensitivity assessment for each landscape character area within the LCT together with the overall LCT assessment rating for each of the different turbine heights considered in the study;
- A table provides analysis of the LCT sensitivity with reference to landscape character areas and the different turbine heights and turbine groups considered in the study.

Landscape Character Area 1a: Delamere

Low Sensitivity	Low-Moderate Sensitivity	Moderate Sensitivity	Moderate-High Sensitivity	High Sensitivity
NATURAL & PHYSICAL LANDSCAPE CRITERIA				
Landform:				
Simple, consistent, flat or elevated plateau	Simple, gently undulating with occasional variety	**Undulating with some variety**	Rolling, varied, but lacking strong complexity	Complex, strong topographical variety, steep
Land cover:				
Simple, predictable limited variety in land cover	Simple, with occasional variety	Some variety	Varied, but lacking complexity	**Much variety in land cover resulting in a mosaic effect**
Scale:				
Large	**Medium/large**	Medium	Medium/small	Small
Enclosure:				
Open, exposed	Generally open, enclosed in places	Some enclosure	**Mostly enclosed, some open areas**	Enclosed
CULTURAL, HERITAGE & HISTORIC CRITERIA				
Historic assets:				
None or few significant historic assets	Some significant historic assets but more assets of lower significance	**Some historic assets of higher and lower significance**	More significant historic assets with some assets of lower significance	Significant historic assets throughout the landscape
Recreation:				
Little or no recreational use	Low level informal or local recreational use	Locally significant recreational use or attraction	**Well used for recreation, greater than local attraction**	Important for recreation for locals and visitors, national designation or attraction
BUILT DEVELOPMENT & SETTLEMENT PATTERN CRITERIA				
Built development:				
Frequent built development & /or infrastructure &/or prominent vertical structures &/or brownfield land	Some built development & /or infrastructure and/or prominent vertical structures and/or some brownfield land	Some built development & /or infrastructure and/or vertical structures but lacking prominence	Limited built development &/or infrastructure and/or vertical structures and/or brownfield land	Very limited or no built development, infrastructure, vertical structures or brownfield land
Settlement:				
Large scale, high density, predominantly modern settlement pattern	Medium to large scale and density, some modern settlement pattern	Medium scale and density, some modern settlement pattern	Low to medium scale and density, little modern settlement pattern	Mostly unsettled or small scale, low density, rural dispersed pattern, little or no modern settl'nt
Human scale features:				
Lacks human scale features	Occasional human scale features	Some human scale features	Frequent human scale features	Numerous human scale features
PERCEPTUAL & VISUAL CRITERIA				
Skylines:				
Not prominent, undistinctive, simple &/or developed	Not prominent, undistinctive, &/or some development	Some prominence not distinctive & /or varied, some development	Prominent &/or some complexity &/or little development	Prominent, distinctive &/or complex &/or undeveloped
Views and landmarks:				
No views from viewpoints or to landmark features	**Views to limited or occasional landmark features**	Views to locally significant landmark features	Views from viewpoints or to important landmark features	Key views from popular viewpoints to important landmark features
Intervisibility:				
Self-contained, restricted intervisibility	**Occasional views to / from adjacent landscapes**	Intervisibility with some neighbouring landscapes	Intervisibility and strong links to neighbouring landscapes	Extensively intervisible, part of wider landscape
Receptors:				
Low number of viewers from properties and transport routes	Local transport routes, limited numbers of residents	**Some visibility from main transport routes, more residents**	Higher visibility from main transport routes &/or properties	Frequent properties and views from main transport routes
Movement:				
Busy, frequent to continuous movement	Frequent movement on roads and railways	**Occasional to frequent movement**	Quiet, limited movement	Still, very occasional movement
Remoteness:				
Not tranquil, much human activity and noise	Limited tranquillity	**Some human activity reducing sense of remoteness**	Relatively tranquil	Tranquil, little human activity or noise
QUALITATIVE CRITERIA				
Scenic quality:				
Low	Low/medium	Medium	**Medium/high**	High
Distinctiveness:				
Not representative	Unrepresentative but with some sense of place	Some distinctive features	**Representative landscape of CWaC**	Distinctive to Cheshire West and Chester
Rarity:				
A common landscape across the area	A more common landscape, with features of some rarity	A more common landscape, with some unique features	**A rarely occurring landscape**	A unique landscape within the area

Overall sensitivity assessment: Moderate-High

Landscape Character Area 1b: Allostock

Low Sensitivity	Low-Moderate Sensitivity	Moderate Sensitivity	Moderate-High Sensitivity	High Sensitivity
NATURAL & PHYSICAL LANDSCAPE CRITERIA				
Landform:				
Simple, consistent, flat or elevated plateau	Simple, gently undulating with occasional variety	Undulating with some variety	Rolling, varied, but lacking strong complexity	Complex, strong topographical variety, steep
Land cover:				
Simple, predictable limited variety in land cover	Simple, with occasional variety	Some variety	Varied, but lacking complexity	**Much variety in land cover resulting in a mosaic effect**
Scale:				
Large	**Medium/large**	Medium	Medium/small	Small
Enclosure:				
Open, exposed	Generally open, enclosed in places	**Some enclosure**	Mostly enclosed, some open areas	Enclosed
CULTURAL, HERITAGE & HISTORIC CRITERIA				
Historic assets:				
None or few significant historic assets	Some significant historic assets but more assets of lower significance	Some historic assets of higher and lower significance	More significant historic assets with some assets of lower signif'ce	Significant historic assets throughout the landscape
Recreation:				
Little or no recreational use	Low level informal or local recreational use	**Locally significant recreational use or attraction**	Well used for recreation, greater than local attraction	Important for recreation for locals and visitors, national designation or attraction
BUILT DEVELOPMENT & SETTLEMENT PATTERN CRITERIA				
Built development:				
Frequent built development & /or infrastructure &/or prominent vertical structures &/or brownfield land	Some built development & /or infrastructure and/or prominent vertical structures and/or some brownfield land	Some built development & /or infrastructure and/or vertical structures but lacking prominence	Limited built development &/or infrastructure and/or vertical structures and/or brownfield land	Very limited or no built development, infrastructure, vertical structures or brownfield land
Settlement:				
Large scale, high density, predominantly modern settlement pattern	Medium to large scale and density, some modern settlement pattern	Medium scale and density, some modern settlement pattern	Low to medium scale and density, little modern settlement pattern	Mostly unsettled or small scale, low density, rural dispersed pattern, little or no modern settlement
Human scale features:				
Lacks human scale features	Occasional human scale features	**Some human scale features**	Frequent human scale features	Numerous human scale features
PERCEPTUAL & VISUAL CRITERIA				
Skylines:				
Not prominent, undistinctive, simple &/or developed	**Not prominent, undistinctive, &/or some development**	Some prominence not distinctive & /or varied, some development	Prominent &/or some complexity &/or little development	Prominent, distinctive &/or complex &/or undeveloped
Views and landmarks:				
No views from viewpoints or to landmark features	**Views to limited or occasional landmark features**	Views to locally significant landmark features	Views from viewpoints or to important landmark features	Key views from popular viewpoints to important landmark features
Intervisibility:				
Self-contained, restricted intervisibility	**Occasional views to / from adjacent landscapes**	Intervisibility with some neighbouring landscapes	Intervisibility and strong links to neighbouring landscapes	Extensively intervisible, part of wider landscape
Receptors:				
Low number of viewers from properties and transport routes	Local transport routes, limited numbers of residents	**Some visibility from main transport routes, more residents**	Higher visibility from main transport routes &/or properties	Frequent properties and views from main transport routes
Movement:				
Busy, frequent to continuous movement	**Frequent movement on roads and railways**	Occasional to frequent movement	Quiet, limited movement	Still, very occasional movement
Remoteness:				
Not tranquil, much human activity and noise	Limited tranquillity	**Some human activity reducing sense of remoteness**	Relatively tranquil	Tranquil, little human activity or noise
QUALITATIVE CRITERIA				
Scenic quality:				
Low	Low/medium	**Medium**	Medium/high	High
Distinctiveness:				
Not representative	Unrepresentative but with some sense of place	**Some distinctive features**	Representative landscape of CWaC	Distinctive to Cheshire West and Chester
Rarity:				
A common landscape across the area	A more common landscape, with features of some rarity	A more common landscape, with some unique features	**A rarely occurring landscape**	A unique landscape within the area

Overall sensitivity assessment: Moderate

Table 3: Summary of Sensitivity of Landscape Character Areas to Wind Energy Development

Landscape Character Types and Landscape Character Areas within the Landscape Strategy 2016	Landscape Sensitivity Criteria																		OVERALL ASSESSMENT
	Natural & Physical				Cultural, Heritage & Historic		Built Development & Settlement Pattern			Perceptual & Visual						Qualitative			
	Landform	Land cover pattern	Scale	Enclosure	Historic assets	Recreation	Built development	Settlement	Human scale features	Skylines	Views & landmarks	Intervisibility	Visual receptors	Movement	Remoteness	Scenic quality	Distinctiveness	Rarity	
LCT 1: Woodland, Heaths, Meres and Mosses																			
LCA 1a: Delamere	M	H	L-M	M-H	M	M-H	M-H	M-H	M-H	L-M	L-M	L-M	M	M	M	M-H	M-H	M-H	**M-H**
LCA 1b: Allostock	L	H	L-M	M	L	M	L-M	H	M	L-M	L-M	L-M	M	L-M	M	M	M	M-H	**M**
LCA 1c: Bickley	L-M	M	M-H	M-H	L	M	M-H	H	M-H	M	L-M	M	M	M-H	M	M	M-H	M-H	**M-H**
LCT 2: Sandstone Ridge																			
LCA 2a: Frodsham	H	M-H	L	L-M	M-H	M-H	L-M	H	M	H	H	H	M-H	M-H	M	H	H	M-H	**H**
LCA 2b: Helsby Hill	H	M-H	L-M	L-M	H	M-H	H	H	M	H	H	H	H	M-H	M-H	H	H	M-H	**H**
LCA 2c: Eddisbury	H	M-H	L-M	L-M	H	M-H	L-M	H	M-H	H	H	H	H	L-M	M	H	H	M-H	**H**
LCA 2d: Beeston Crag	H	M	H	L-M	H	H	H	H	M	H	H	H	M-H	M-H	M	H	H	H	**H**
LCA 2e: Higher Burwardsley	H	M-H	M	L-M	M	M-H	M-H	H	M	H	H	H	L-M	M-H	M	H	H	M-H	**H**
LCA 2f: Larkton Hill/Hether Wood	H	M	M-H	M	M-H	M-H	H	H	M	H	H	H	M-H	M-H	M-H	H	H	M-H	**H**
LCT 3: Sandstone Fringe																			
LCA 3a: Helsby to Tarporley	M	M	M	M	M	M	L-M	M-H	M-H	M	M-H	M-H	M	M	M	M-H	M-H	M	**M**
LCA 3b: Beeston to Duckington	M-H	M-H	M	L-M	M-H	M	M-H	M-H	M-H	M	M-H	M-H	M	M	M	M-H	M-H	M	**M-H**

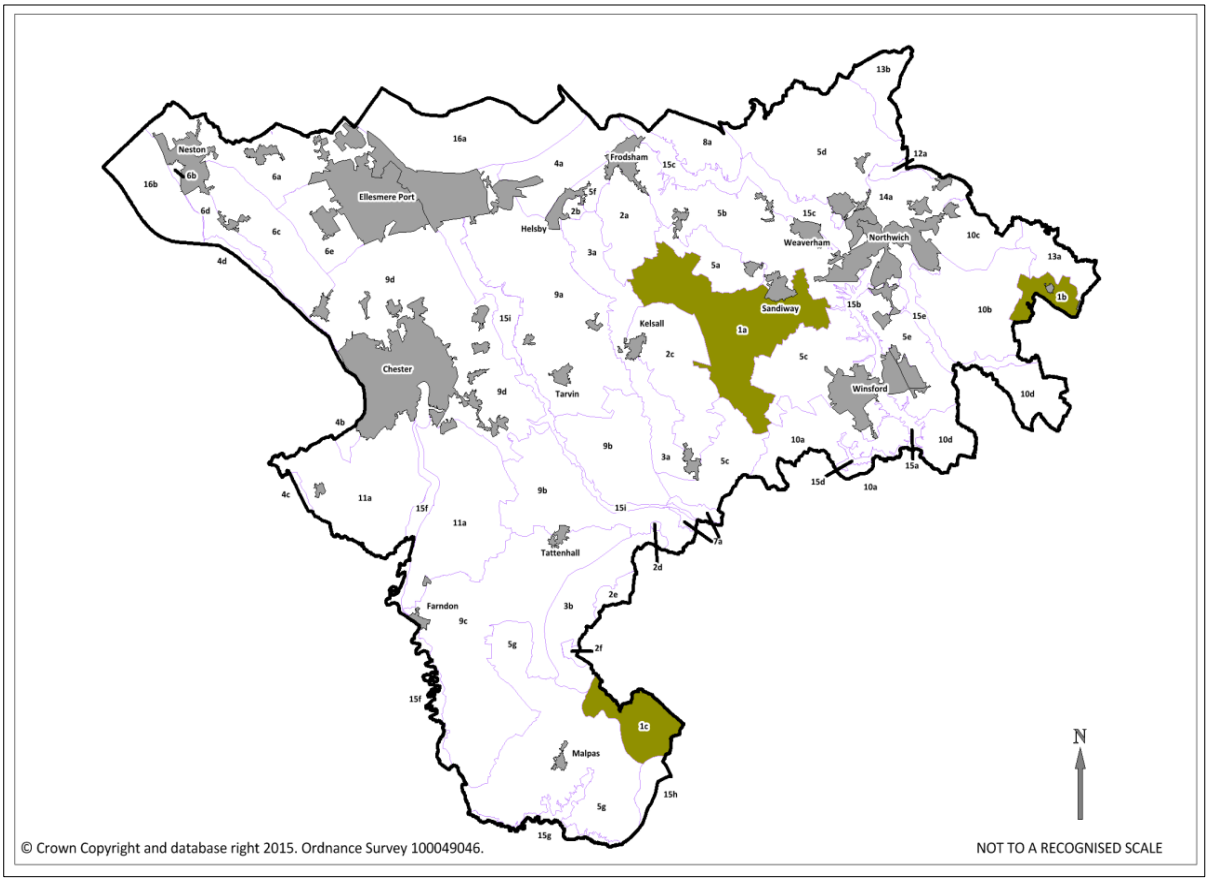
Landscape Character Types and Landscape Character Areas within the Landscape Strategy 2016	Landscape Sensitivity Criteria																		OVERALL ASSESSMENT
	Natural & Physical				Cultural, Heritage & Historic		Built Development & Settlement Pattern			Perceptual & Visual						Qualitative			
	Landform	Land cover pattern	Scale	Enclosure	Historic assets	Recreation	Built development	Settlement	Human scale features	Skylines	Views & landmarks	Intervisibility	Visual receptors	Movement	Remoteness	Scenic quality	Distinctiveness	Rarity	
LCT 4: Drained Marsh																			
LCA 4a: Frodsham, Helsby and Lordship Marshes	L	L-M	L	L	L-M	M	L-M	H	L-M	L-M	M-H	M	M-H	L	L-M	L	M-H	M-H	**L-M**
LCA 4b: The Lache Eyes	L	L	L	L	L	L-M	L-M	H	L-M	L-M	M	M	L	L-M	L-M	L-M	M	M-H	**L-M**
LCA 4c: Dodleston Drained Marsh	L	L	L	L	L	L	H	H	L-M	L-M	M	M	L	M-H	M-H	L-M	M	M-H	**L-M**
LCA 4d: Burton & Shotwick Drained Marsh	L	M	L	L	L	M-H	L-M	H	L-M	L-M	M	L-M	L-M	M	M	L-M	M	M-H	**L-M**
LCT 5: Undulating Enclosed Farmland																			
LCA 5a: Norley	M-H	M-H	M-H	M-H	L-M	M	M-H	M-H	M-H	L-M	M	M	L-M	M-H	M	M-H	M	M	**M-H**
LCA 5b: Frodsham to Northwich	L-M	L-M	L-M	M	L-M	M	L-M	M-H	M-H	L-M	M-H	M	M	M	M	M	M	M	**M**
LCA 5c: Eaton, Marton & Over	M	L-M	L-M	M	M-H	M	M	M-H	M-H	L-M	M	M	M	L-M	M	M	M	M	**M**
LCA 5d: Whitley and Comberbach	L-M	L-M	L-M	M	M	M	L-M	M-H	M-H	L-M	L-M	L-M	M	M	M	M	M	M	**M**
LCA 5e: East Winsford	L-M	L-M	M	M	M-H	L-M	L-M	M	M-H	L-M	L-M	L-M	M	M	M	L-M	M	M	**M**
LCA 5f: Helsby to Frodsham	M	M	M-H	M	L	M	L-M	M-H	M-H	M-H	H	M-H	M-H	L-M	M	M-H	M	M	**M-H**
LCA 5g: Malpas	M	M-H	M	L-M	H	M-H	M-H	M	M-H	M	M-H	M-H	M-H	M-H	M-H	M-H	M	M	**M-H**

Landscape Character Types and Landscape Character Areas within the Landscape Strategy 2016	Landscape Sensitivity Criteria																		OVERALL ASSESSMENT
	Natural & Physical				Cultural, Heritage & Historic		Built Development & Settlement Pattern			Perceptual & Visual						Qualitative			
	Landform	Land cover pattern	Scale	Enclosure	Historic assets	Recreation	Built development	Settlement	Human scale features	Skylines	Views & landmarks	Intervisibility	Visual receptors	Movement	Remoteness	Scenic quality	Distinctiveness	Rarity	
LCT 6: Enclosed Farmland																			
LCA 6a: Willaston	L-M	L-M	M	M	L-M	M	L	M	M-H	L-M	M-H	L-M	M-H	L-M	L-M	M-H	M	M	**L-M**
LCA 6b: Neston	L	L-M	M-H	M-H	L	M	M-H	H	M-H	M	M-H	M	M-H	H	M-H	M	L-M	M	**M-H**
LCA 6c: Neston to Saughall	L-M	L-M	M-H	M	L-M	L-M	L-M	M-H	M-H	L-M	M-H	M	M	M	M	M-H	M	M	**M**
LCA 6d: Ness, Burton, Puddington & Shotwick Slopes	L-M	L-M	L-M	L-M	M	M	L-M	H	M	M	M-H	M	L-M	M-H	M-H	M-H	L-M	M	**M**
LCA 6e: Capenhurst Plateau	L	L-M	M-H	M-H	L-M	L-M	L	M	M	L-M	L	L	M-H	L-M	L-M	L-M	L-M	L-M	**L-M**
LCT 7: Rolling Farmland																			
LCA 7a: Tiverton & Tilston	H	L-M	M-H	M	M-H	M	M	M-H	M	M-H	M-H	M	M	M	L-M	M-H	M	H	**M-H**
LCT 8: Heathy Farmland and Woodland																			
LCA 8a: Aston	L-M	L-M	L	L-M	M	L-M	L-M	H	M	M	M-H	M-H	M	M	M	M-H	M	H	**M-H**
LCT 9: Cheshire Plain West																			
LCA 9a: Dunham to Tarvin Plain	L-M	L-M	L	L-M	L-M	M	L-M	M	M-H	M	M-H	M-H	M-H	M	M	M	M-H	L	**M**
LCA 9b: Hargrave, Hoofield & Beeston Plain	L-M	L	L	L-M	M	M	M-H	H	M-H	M-H	H	M-H	L-M	M-H	M-H	M	M-H	L	**M-H**
LCA 9c: Tattenhall to Shocklach Plain	L-M	L	L-M	L-M	M-H	M	M-H	H	M-H	M-H	H	M-H	M	M-H	M-H	M	M-H	L	**M-H**

Landscape Character Types and Landscape Character Areas within the Landscape Strategy 2016	Landscape Sensitivity Criteria																		OVERALL ASSESSMENT
	Natural & Physical				Cultural, Heritage & Historic		Built Development & Settlement Pattern			Perceptual & Visual						Qualitative			
	Landform	Land cover pattern	Scale	Enclosure	Historic assets	Recreation	Built development	Settlement	Human scale features	Skylines	Views & landmarks	Intervisibility	Visual receptors	Movement	Remoteness	Scenic quality	Distinctiveness	Rarity	
LCA 9d: Saughall to Waverton Plain	M	M-H	M	L-M	M-H	M	L-M	M	M	L-M	M	M	H	L-M	L-M	L-M	M	L-M	**M**
LCT 10: Cheshire Plain East																			
LCA 10a: Darnhall Plain	L	L	L-M	L-M	L-M	L	H	H	M-H	L	M-H	M-H	L	H	H	M	M-H	L	**M**
LCA 10b: Stublach Plain	L	M	L	L-M	L-M	L-M	L-M	H	M-H	L-M	M	L-M	M	M-H	M	M	H	M-H	**L-M**
LCA 10c: Lostock Plain	L	M	L	L	L-M	L-M	L-M	M-H	M-H	L-M	M	L-M	M	M	M	M	H	M-H	**L-M**
LCA 10d: Wimboldsley and Sproston Plain	L	L	L	L	L-M	L-M	L-M	M-H	M-H	L-M	L-M	L-M	M	M	M	M	M-H	L	**L-M**
LCT 11: Estate Farmland																			
LCA 11a: Grosvenor Estate	L-M	M	M	M-H	H	L-M	M	M-H	M-H	M	M-H	M	M	M	M	H	H	H	**M-H**
LCT 12: Mere Basin																			
LCA 12a: Budworth Mere	H	H	M-H	H	L	L-M	H	H	M	M	M	M	M	M-H	M-H	M	H	M-H	**H**
LCT 13: Lowland Farmland and Mosses																			
LCA 13a: Peover	L-M	L-M	M-H	M-H	L	L	M	M-H	M-H	L-M	M	L-M	M	M-H	M	M	M	L-M	**M**
LCA 13b: Arley West	L-M	L-M	M	M	L	L-M	H	H	M-H	L-M	M	L-M	L	M-H	H	M	M	L-M	**M-H**
LCT 14: Salt Heritage Landscape																			
LCA 14a: Northwich	H	H	L	M	L-M	M-H	L	L-M	L-M	L-M	M-H	L-M	M-H	M	L-M	L-M	H	H	**L-M**
LCT 15: River Valleys																			
LCA 15a: Upper Weaver Valley	H	H	H	H	L-M	M	H	H	M	M-H	L	L	L-M	M-H	M-H	H	M-H	M	**H**

Landscape Character Types and Landscape Character Areas within the Landscape Strategy 2016	Landscape Sensitivity Criteria																		OVERALL ASSESSMENT
	Natural & Physical				Cultural, Heritage & Historic		Built Development & Settlement Pattern			Perceptual & Visual						Qualitative			
	Landform	Land cover pattern	Scale	Enclosure	Historic assets	Recreation	Built development	Settlement	Human scale features	Skylines	Views & landmarks	Intervisibility	Visual receptors	Movement	Remoteness	Scenic quality	Distinctiveness	Rarity	
LCA 15b: Mid Weaver Valley	H	H	H	H	M	M-H	L-M	M-H	M	M-H	M	L	L-M	M-H	M-H	H	M-H	M	**H**
LCA 15c: Lower Weaver Valley	H	H	M-H	M-H	M	M-H	L-M	H	M	M-H	M	L	M	M-H	M-H	H	M-H	M	**M-H**
LCA 15d: Ash Brook Valley	H	H	H	H	L-M	L	H	H	M	M-H	L-M	L	L	H	H	M-H	M-H	M	**H**
LCA 15e: Dane Valley	H	H	M-H	M-H	M	M	M-H	M-H	M	M	M	L-M	M	M-H	H	M-H	M-H	M	**M-H**
LCA 15f: Dee Valley	M	H	M-H	H	M-H	M	M-H	M-H	M	M-H	M	L-M	M	M-H	M-H	M-H	M-H	M	**M-H**
LCA 15g: Wych Valley	H	H	H	H	L-M	L-M	H	H	M	M-H	L	L	L	H	H	H	M-H	M	**H**
LCA 15h: Grindley Valley	L-M	M	M	M	L-M	M	H	H	M-H	M	L-M	L-M	M	M-H	M-H	M-H	M-H	M	**M-H**
LCA 15i: Gowy Valley	L-M	M	L-M	L-M	M	L-M	L-M	H	L-M	M	L	L-M	M	M	M-H	M	M	M	**M**
LCT 16: Mudflats & Saltmarsh																			
LCA 16a: Stanlow & Ince Banks	L	L	L	L	L	L	L	H	L	L	M-H	H	L	H	H	M-H	M-H	M-H	**H**
LCA 16b: Dee Estuary	L	L	L	L	L-M	L-M	L-M	H	L	L	H	H	M-H	H	H	M-H	M-H	M-H	**H**

SENSITIVITY TO WIND ENERGY DEVELOPMENT
LCT 1: WOODLANDS, HEATHS, MERES & MOSSES



There are 3 Landscape Character Areas within LCT 1:
LCA 1a: *Delamere*; LCA 1b: *Allostock*; LCA 1c: *Bickley*

LCT 1 SENSITIVITY OF KEY CHARACTERISTICS TO WIND ENERGY DEVELOPMENT	
Sensitivity Attributes	**Summary of Sensitivity**
Natural & Physical	• The medium to large scale, gently undulating, uniform landscape could potentially support wind energy development in principle; • The variety in land cover, enclosure and mosaic of landscape features are sensitive characteristics.
Cultural, Heritage & Historic	• Historic assets are generally of local significance although impact on setting should be carefully considered; • LCA 1a: *Delamere* is highly sensitive being particularly important for recreation.
Built Development & Settlement Pattern	• Limited built development and man-made structures, the frequent human-scale features, and the mostly small scale, low density, dispersed settlement pattern are highly sensitive to wind energy that would be out of scale and increase the perception of human influence.
Perceptual & Visual	• Skylines are not prominent, with limited views and intervisibility, although views from the sandstone ridge are sensitive and visual receptors have moderate sensitivity;

LCT 1 SENSITIVITY OF KEY CHARACTERISTICS TO WIND ENERGY DEVELOPMENT	
Sensitivity Attributes	**Summary of Sensitivity**
	• Some activity reduces the sense of remoteness and thus sensitivity, although movement is less in LCA 1c: *Bickley* which is more sensitive.
Qualitative	• Relatively high scenic quality, rarity and distinctiveness of the landscape increases sensitivity to the principle of wind energy development. The LCT is sensitive to cumulative effects of a number of turbines that could alter landscape character.

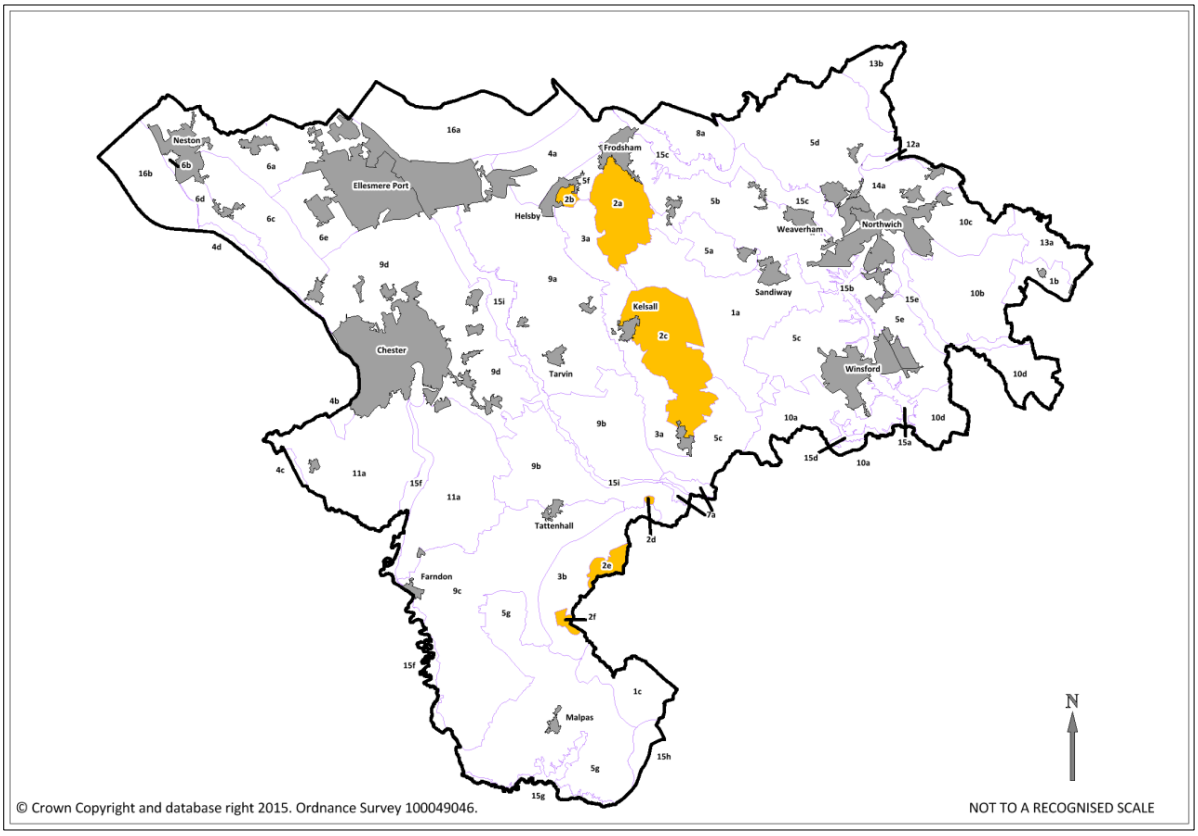
LCT 1 WIND ENERGY SENSITIVITY ASSESSMENT				
LCA SENSITIVITY		**LCT 1 SENSITIVITY**		
LCA	**Sensitivity**	**Smaller Turbines [height 10m-30m]**	**Medium Turbines [height 30m-80m]**	**Larger Turbines [height 80m-130m+]**
1a	M-H	M	M-H	H
1b	M			
1c	M-H			

LCT 1 WIND ENERGY SENSITIVITY ANALYSIS
Sensitivity Analysis
• The variety of land cover, presence of human-scale features in the landscape, limited built development and man-made structures, and the mostly small scale, low density, dispersed settlement pattern means LCT 1 is particularly sensitive to medium and larger turbines; • Large and medium scale wind development in identified "areas of least constraint" [*] in LCA 1a: *Delamere* could mean the loss of woodland and forestry, which could adversely affect its importance for recreation; • Although there are "areas of least constraint" [*] for medium and large scale wind development in LCA 1c: *Bickley,* turbines of this scale are unlikely to be acceptable in a quiet landscape with limited movement and built development. They would be out of scale with the small to medium scale, mostly enclosed landscape, the small scale, low density rural dispersed settlement pattern, and the frequent human scale landscape features; • There may be some potential for medium scale wind development with turbines at the lower end of the height scale if located in identified "areas of least constraint" [*] away from the more tranquil and naturalistic locations; • There are no pockets of identified "areas of least constraint" for large and medium scale wind development in LCA 1b: *Allostock*; • Medium and larger turbines are unlikely to be accommodated within parts of LCA 1b: *Allostock* since it lies within the MOD low fly zone (see Figure 1).
Turbine Groups
• The combination of key characteristics of this LCT means it is likely to be particularly sensitive to larger groups of 7-13 turbines that would be over dominant; • The greatest potential for wind energy development within LCT 1 is for smaller single turbines or small groups of up to 6 smaller turbines, if carefully located to avoid significant adverse landscape and visual effects, including cumulative effects.

[*] Cheshire West & Chester Low Carbon and Renewable Energy Study, 2012

[*] Cheshire West & Chester Low Carbon and Renewable Energy Study, 2012

SENSITIVITY TO WIND ENERGY DEVELOPMENT
LCT 2: SANDSTONE RIDGE



There are 6 Landscape Character Areas within LCT 2:
LCA 2a: *Frodsham*; LCA 2b: *Helsby Hill*; LCA 2c: *Eddisbury*; LCA 2d: *Beeston Crag*; LCA 2e: *Higher Burwardsley*; LCA 2f: *Larkton Hill/Hether Wood*

LCT 2 SENSITIVITY OF KEY CHARACTERISTICS TO WIND ENERGY DEVELOPMENT	
Sensitivity Attributes	**Summary of Sensitivity**
Natural & Physical	• The strong topographical landform and varied land cover of the sandstone ridge make it particularly sensitive to wind energy development in principle.
Cultural, Heritage & Historic	• The presence of significant historic assets throughout the landscape, including iconic hill forts and castles, make this LCT particularly sensitive to wind energy development in principle; • The ridge provides an important recreational resource with rights of way including long distance footpaths.
Built Development & Settlement Pattern	• Limited built development and modern man-made structures, and the mostly unsettled, small scale, low density, dispersed settlement pattern is highly sensitive to wind energy development.
Perceptual & Visual	• The distinctive sandstone ridge is visually prominent, with key views from sensitive visual receptors, and extensive intervisibility; • Some human activity reduces the sense of remoteness and thus sensitivity, although there are more sensitive tranquil areas where movement is limited.

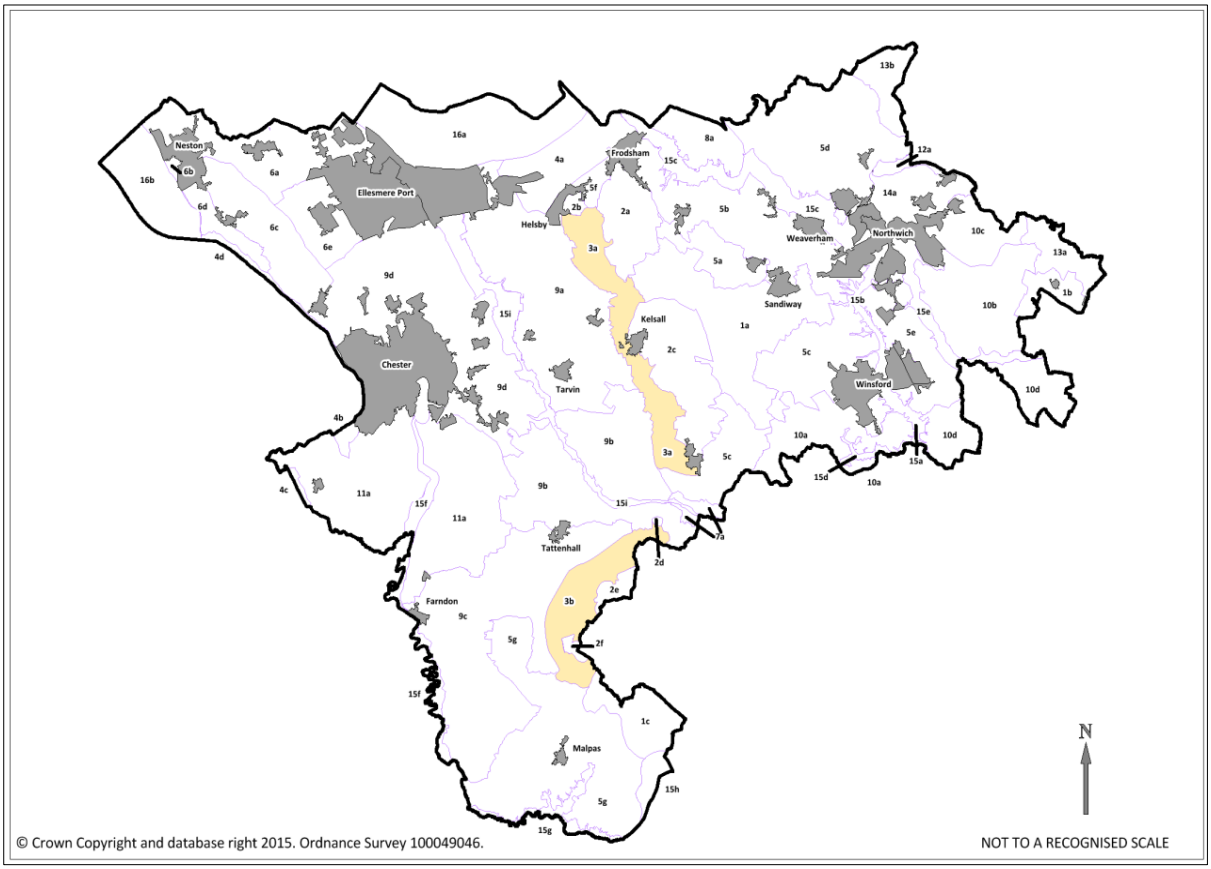
LCT 2 SENSITIVITY OF KEY CHARACTERISTICS TO WIND ENERGY DEVELOPMENT	
Sensitivity Attributes	**Summary of Sensitivity**
Qualitative	• High scenic quality, rarity and distinctiveness of the landscape create high sensitivity to the principle of wind energy development.

LCT 2 WIND ENERGY SENSITIVITY ASSESSMENT				
LCA SENSITIVITY		**LCT 2 SENSITIVITY**		
LCA	**Sensitivity**	**Smaller Turbines [height 10m-30m]**	**Medium Turbines [height 30m-80m]**	**Larger Turbines [height 80m-130m+]**
2a	H	M-H	H	H
2b	H			
2c	H			
2d	H			
2e	H			
2f	H			

LCT 2 WIND ENERGY SENSITIVITY ANALYSIS
Sensitivity Analysis
• The prominent sandstone ridge is probably the most distinctive feature of the CWaC landscape, valued for its scenic quality and its historic, archaeological and ecological importance as an Area of Special County Value (ASCV), and thus highly sensitive to the principle of wind energy development; • The wide extent of visibility of the ridge makes it particularly sensitive to all heights and groupings of turbines including smaller turbines, although there may be some limited potential for turbines at the lower end of the height scale where associated with similar scale features in the landscape; • Although there are vertical structures on parts of the ridge, including communication masts in LCA 2a: *Frodsham* and LCA 2c: *Eddisbury*, prominent wind turbines on the skyline would add to the perception of clutter from man-made structures and cumulative impact would need to be carefully considered; • Technically identified "areas of least constraint" for large and medium scale wind development [*] in LCA 2a: *Frodsham* and LCA 2c: *Eddisbury* are also highly sensitive in landscape character terms to turbines of this scale that would be visually prominent over an extensive area; • Medium and larger turbines are unlikely to be accommodated within LCA 2d: *Beeston Crag*, LCA 2e: *Higher Burwardsley* and LCA 2f: *Larkton Hill/Hether Wood* for the above reasons and because they are located within the MOD low fly zone (see Figure 1).
Turbine Groups
• The wide extent of visibility of the ridge makes it particularly sensitive to all groupings of turbines.

[*] Cheshire West & Chester Low Carbon and Renewable Energy Study, 2012

SENSITIVITY TO WIND ENERGY DEVELOPMENT
LCT 3: SANDSTONE FRINGE



There are 2 Landscape Character Areas within LCT 3:
LCA 3a: *Helsby to Tarporley*; LCA 3b: *Beeston to Duckington*

LCT 3 SENSITIVITY OF KEY CHARACTERISTICS TO WIND ENERGY DEVELOPMENT	
Sensitivity Attributes	**Summary of Sensitivity**
Natural & Physical	• The undulating, transitional medium scale landscape is of moderate to high sensitivity overall that could potentially support wind energy development in principle; • Areas of more varied topography and land cover are more sensitive.
Cultural, Heritage & Historic	• Some historic assets are of significance where impact on setting should be carefully considered; • Rights of way including long distance footpaths provide a recreational resource.
Built Development & Settlement Pattern	• Limited built development and man-made structures, the frequent human-scale features, and the mostly small to medium scale and density settlement pattern are sensitive to wind energy that would be out of scale and increase the perception of human influence.
Perceptual & Visual	• Skylines are of some prominence though not as distinctive as the neighbouring ridge, with key views and strong links to neighbouring landscapes, and visual receptors have moderate sensitivity; • Some human activity and occasional to frequent movement reduces the sense of remoteness and thus sensitivity.

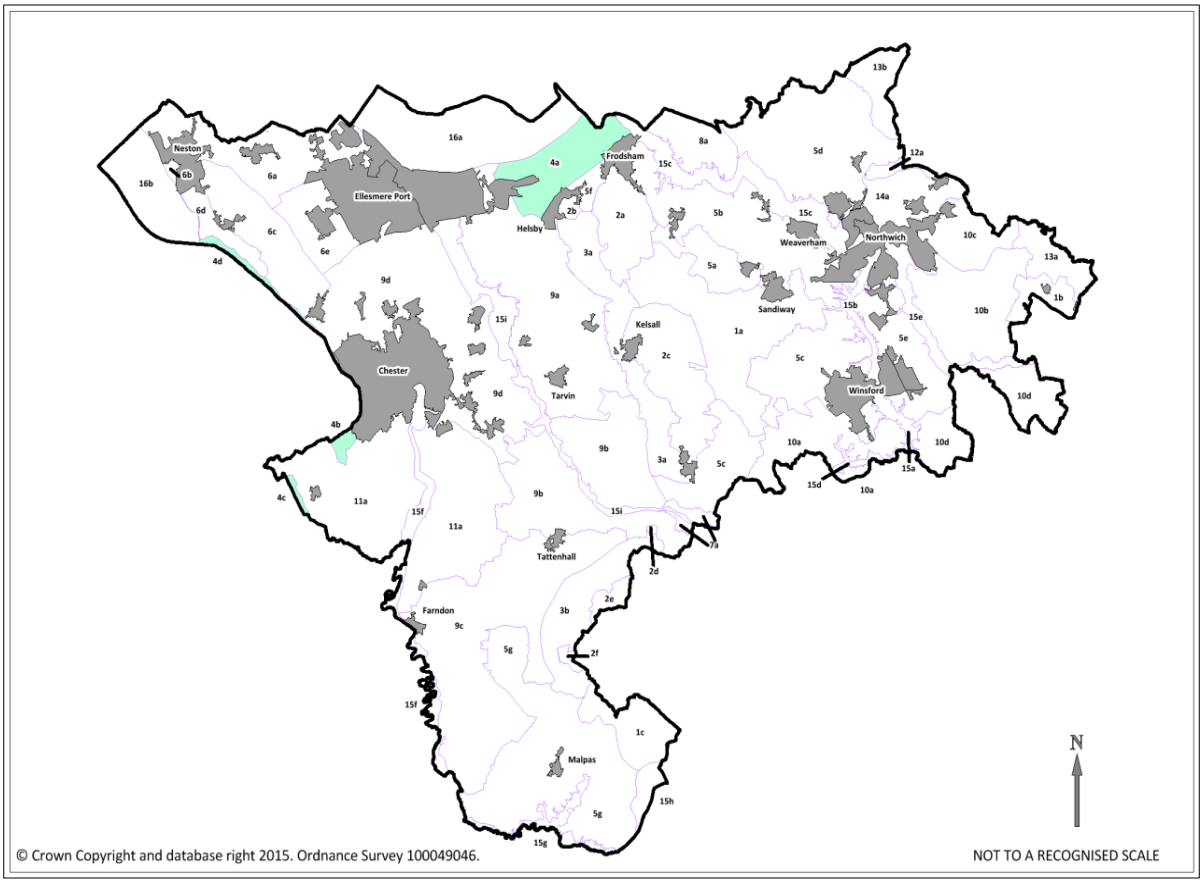
LCT 3 SENSITIVITY OF KEY CHARACTERISTICS TO WIND ENERGY DEVELOPMENT	
Sensitivity Attributes	**Summary of Sensitivity**
Qualitative	• Relatively high scenic quality and distinctiveness of the landscape increases sensitivity to the principle of wind energy development. The LCT is sensitive to cumulative effects of a number of turbines that could alter landscape character.

LCT 3 WIND ENERGY SENSITIVITY ASSESSMENT					
LCA SENSITIVITY			**LCT 3 SENSITIVITY**		
LCA	**Sensitivity**		**Smaller Turbines [height 10m-30m]**	**Medium Turbines [height 30m-80m]**	**Larger Turbines [height 80m-130m+]**
3a	M		M	M-H	H
3b	M-H				

LCT 3 WIND ENERGY SENSITIVITY ANALYSIS
Sensitivity Analysis
• The presence of human-scale features in the landscape, limited built development and man-made structures, the mostly small to medium scale and density settlement pattern and the importance of views means LCT 3 is particularly sensitive to medium and larger turbines; • There are very limited pockets of technically identified "areas of least constraint" * in LCA 3a: *Helsby to Tarporley* where there may be some potential for medium scale wind development with turbines at the lower end of the height scale if located away from the more tranquil and naturalistic locations, avoid key views, and where the sandstone ridge acts as a backdrop; • There are no pockets of identified "areas of least constraint" for large and medium scale wind development in LCT 3; • Medium and larger turbines are unlikely to be accommodated within LCA 3b: *Beeston to Duckington* which lies within the MOD low fly zone (see Figure 1).
Turbine Groups
• The medium scale and enclosure of this LCT means it is likely to be particularly sensitive to larger groups of 7-13 turbines; • The greatest potential for wind energy development within LCT 3 is for smaller single turbines or small groups of up to 6 smaller turbines, if carefully located to avoid significant adverse landscape and visual effects, including cumulative effects.

* Cheshire West & Chester Low Carbon and Renewable Energy Study, 2012

SENSITIVITY TO WIND ENERGY DEVELOPMENT
LCT 4: DRAINED MARSH



There are 4 Landscape Character Areas within LCT 4:
LCA 4a: *Frodsham, Helsby and Lordship Marshes*; LCA 4b: *The Lache Eyes*; LCA 4c: *Dodleston Drained Marsh*; LCA 4d: *Burton & Shotwick Drained Marsh*

LCT 4 SENSITIVITY OF KEY CHARACTERISTICS TO WIND ENERGY DEVELOPMENT	
Sensitivity Attributes	**Summary of Sensitivity**
Natural & Physical	• The large scale, open, uniform landscape with limited variety of land cover could potentially support wind energy development in principle.
Cultural, Heritage & Historic	• There are few significant historic assets with generally low sensitivity; • Generally a low level of recreational use although LCA 4d: *Burton & Shotwick Drained Marsh* is more sensitive with recreational fishing ponds and visitors to the RSPB Burton Mere wetlands reserve.
Built Development & Settlement Pattern	• The influence of built development and vertical man-made structures, and the lack of human-scale features reduces sensitivity; • The mostly small scale, low density, dispersed settlement pattern is highly sensitive to wind energy that would be out of scale and increase the perception of human influence.

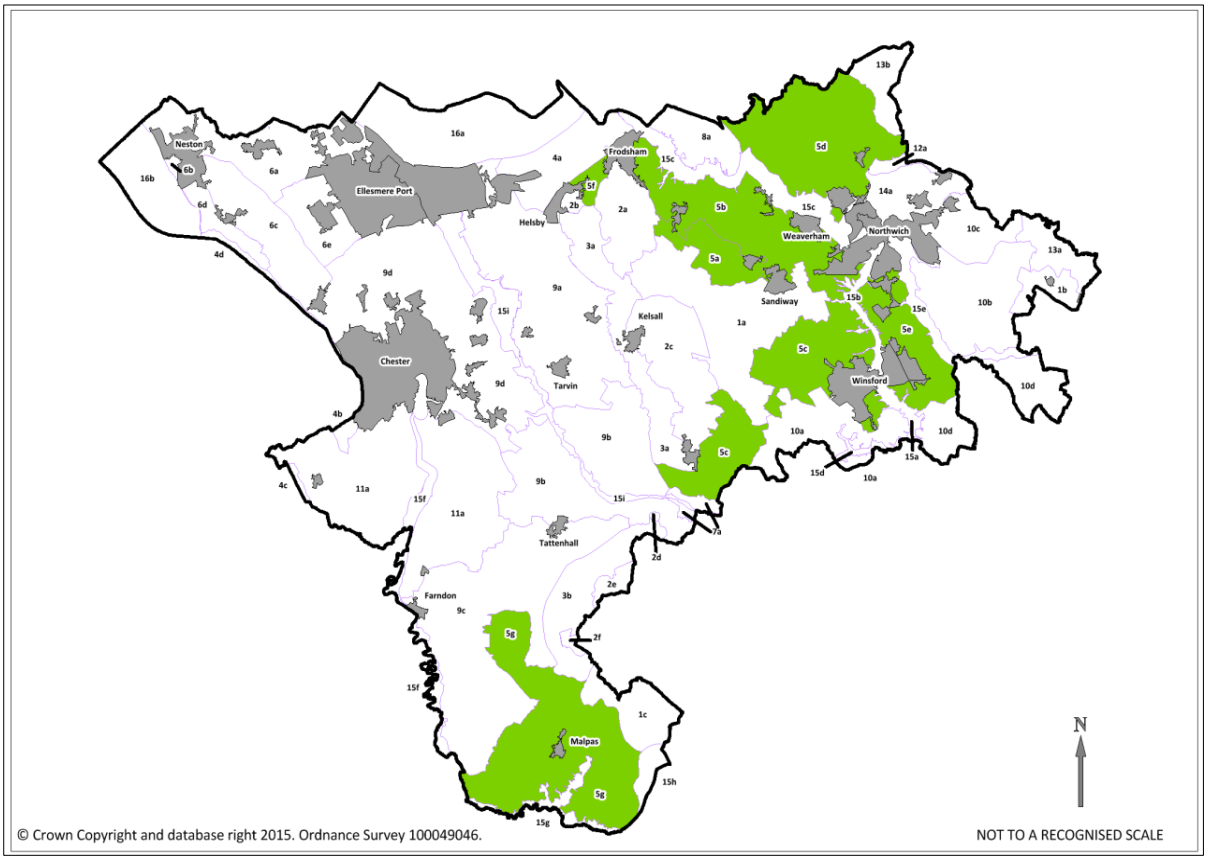
LCT 4 SENSITIVITY OF KEY CHARACTERISTICS TO WIND ENERGY DEVELOPMENT	
Sensitivity Attributes	**Summary of Sensitivity**
Perceptual & Visual	• Skylines are not prominent, with locally significant views, limited intervisibility and visual receptors reducing sensitivity; • Various degrees of remoteness throughout the LCT, with frequent movement reducing tranquillity and thus sensitivity in some areas, and greater tranquillity in quieter areas which are more sensitive.
Qualitative	• Low to medium scenic quality with some distinctiveness reduces sensitivity, but the drained marsh is a less common landscape in CWaC the character of which could be adversely affected by wind energy development. The LCT is sensitive to cumulative effects of a number of turbines that could alter landscape character and 'sense of place'.

LCT 4 WIND ENERGY SENSITIVITY ASSESSMENT				
LCA SENSITIVITY		**LCT 4 SENSITIVITY**		
LCA	**Sensitivity**	**Smaller Turbines [height 10m-30m]**	**Medium Turbines [height 30m-80m]**	**Larger Turbines [height 80m-130m+]**
4a	L-M	L-M	M	M-H
4b	L-M			
4c	L-M			
4d	L-M			

LCT 4 WIND ENERGY SENSITIVITY ANALYSIS
Sensitivity Analysis
• The landscape character areas within this LCT are located alongside and are heavily influenced by the character of adjacent areas beyond the CWaC boundary including the Dee and Mersey estuaries. This includes tall industrial structures and other infrastructure where larger turbines would be in character and scale in the more open, exposed locations where sensitivity is reduced; • This includes LCA 4a: *Frodsham, Helsby and Lordship Marshes* where 19 turbines 125m tall are under construction. Even so, intervisibility with the sandstone ridge makes this a sensitive area where further large scale wind energy development could create cumulative effects; • Large and medium scale wind development in small pockets identified as "areas of least constraint" * in LCA 4d: *Burton & Shotwick Drained Marsh* could affect the sense of remoteness and perception of naturalness, and would be visually prominent on the skyline if they breached the ridge of the *Enclosed Farmland* LCT to the east.
Turbine Groups
• The greatest potential for wind energy development within LCT 1 is for smaller single turbines or small groups of up to 6 smaller turbines, if carefully located to avoid significant adverse landscape and visual effects, including cumulative effects; • The limited extent of LCAs in this LCT within CWaC means larger groups of 7-13 turbines may dominate the landscape and reduce the sense of openness.

* Cheshire West & Chester Low Carbon and Renewable Energy Study, 2012

SENSITIVITY TO WIND ENERGY DEVELOPMENT
LCT 5: UNDULATING ENCLOSED FARMLAND



There are 7 Landscape Character Areas within LCT 5:
LCA 5a: *Norley*; LCA 5b: *Frodsham to Northwich*; LCA 5c: *Eaton, Marton & Over*;
LCA 5d: *Whitley and Comberbach*; LCA 5e: *East Winsford*; LCA 5f: *Helsby to Frodsham*;
LCA 5g: *Malpas*

LCT 5 SENSITIVITY OF KEY CHARACTERISTICS TO WIND ENERGY DEVELOPMENT	
Sensitivity Attributes	**Summary of Sensitivity**
Natural & Physical	• The medium scale largely enclosed, undulating nature of the landscape make it more sensitive to larger wind energy development.
Cultural, Heritage & Historic	• There are locally significant historic assets where impact on setting should be carefully considered; historic character of LCA 5g: *Malpas* makes it of high sensitivity to modern influences; • Generally a low level of recreational use although parts of LCA 5g: *Malpas* are more sensitive around the Carden Park Estate.
Built Development & Settlement Pattern	• The influence of built development and vertical man-made structures makes some parts less sensitive but frequent human-scale features increases sensitivity to medium and large scale wind energy; • The mostly small scale, low density, dispersed settlement pattern is highly sensitive to wind energy that would be out of scale and increase the perception of human influence.
Perceptual & Visual	• Skylines are generally not prominent, with locally significant views,

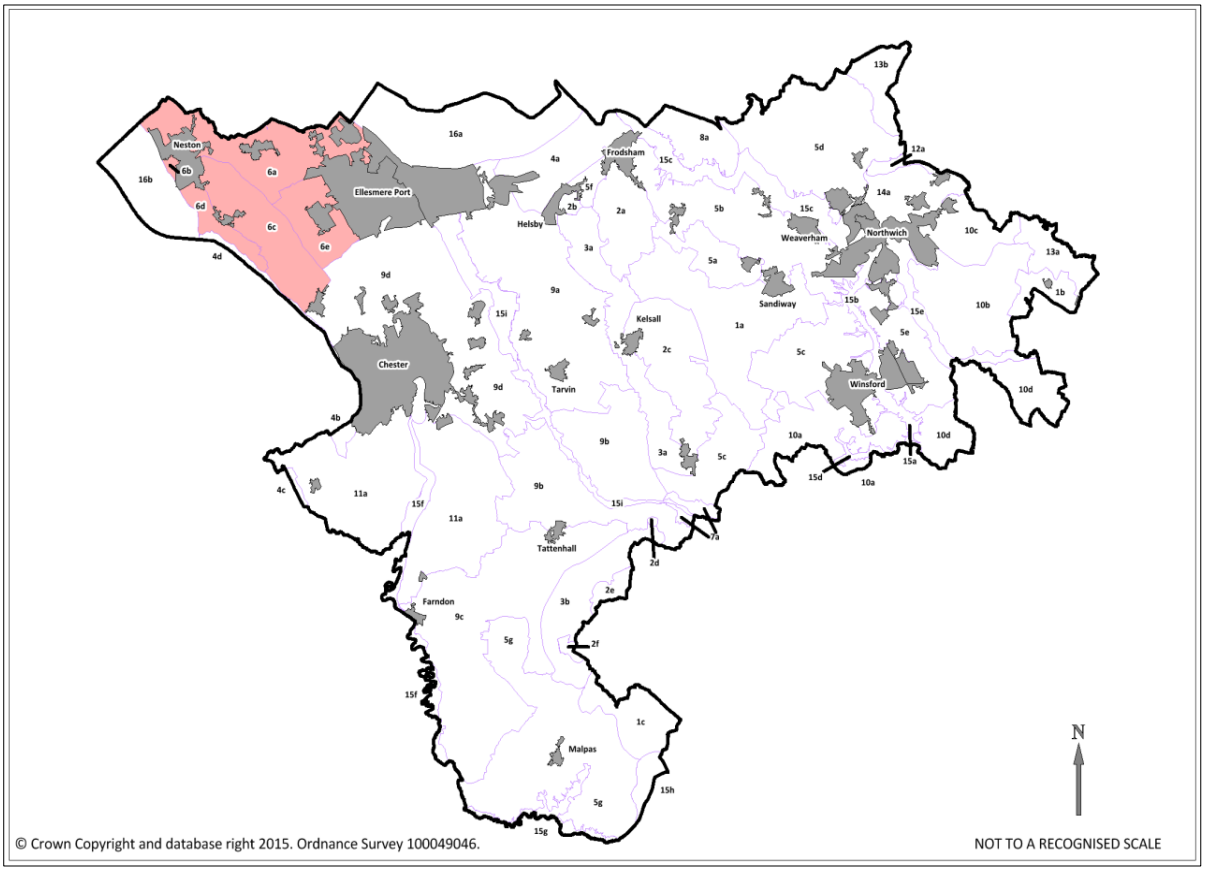
LCT 5 SENSITIVITY OF KEY CHARACTERISTICS TO WIND ENERGY DEVELOPMENT	
Sensitivity Attributes	**Summary of Sensitivity**
	limited intervisibility and visual receptors reducing sensitivity; however LCA 5f: *Helsby to Frodsham* is the exception due to its importance to the setting of the sandstone ridge increasing sensitivity to medium and large scale wind energy; • In general human activity reduces the sense of remoteness with occasional to frequent movement, although parts of the LCT are relatively tranquil with higher sensitivity.
Qualitative	• Pleasant scenic quality and some distinctiveness with overall moderate sensitivity; • The LCT is a more common landscape in CWaC with some distinctive features. The LCT is sensitive to cumulative effects of a number of turbines that could alter landscape character and 'sense of place'.

LCT 5 WIND ENERGY SENSITIVITY ASSESSMENT				
LCA SENSITIVITY		**LCT 5 SENSITIVITY**		
LCA	**Sensitivity**	**Smaller Turbines [height 10m-30m]**	**Medium Turbines [height 30m-80m]**	**Larger Turbines [height 80m-130m+]**
5a	M-H	L-M	M	M-H
5b	M			
5c	M			
5d	M			
5e	M			
5f	M-H			
5g	M-H			

LCT 5 WIND ENERGY SENSITIVITY ANALYSIS
Sensitivity Analysis
• The undulating, enclosed nature of the landscape, the frequent human-scale features and the mostly small scale, low density, dispersed settlement pattern makes this LCT particularly sensitive to medium and large scale wind energy development; • Areas of smaller scale enclosure, more remote and tranquil areas away from built influences where there is a perceived naturalness, are even more highly sensitive to medium and large scale wind energy development. There is more potential for single smaller turbines within these locations; • More open areas larger in scale and where there is more man-made influence from built development or transport infrastructure are less sensitive to medium and large scale wind energy development; • Medium and larger turbines are unlikely to be accommodated within parts of LCA 5c: *Eaton, Marton & Over* where it lies within the MOD low fly zone (see Figure 1).
Turbine Groups
• There may be some potential for single and small groups of up to 6 medium or larger turbines in identified "areas of least constraint" [*] in LCA 5d: *Whitley and Comberbach* and LCA 5e: *East Winsford* that are more open areas larger in scale and where there is more man-made influence from built development or transport infrastructure.

[*] Cheshire West & Chester Low Carbon and Renewable Energy Study, 2012

SENSITIVITY TO WIND ENERGY DEVELOPMENT
LCT 6: ENCLOSED FARMLAND



There are 5 Landscape Character Areas within LCT 6:
LCA 6a: *Willaston*; LCA 6b: *Neston*; LCA 6c: *Neston to Saughall*;
LCA 6d: *Ness, Burton, Puddington & Shotwick Slopes*; LCA 6e: *Capenhurst Plateau*

LCT 6 SENSITIVITY OF KEY CHARACTERISTICS TO WIND ENERGY DEVELOPMENT	
Sensitivity Attributes	**Summary of Sensitivity**
Natural & Physical	• The relatively flat uniform landform and simple land cover with occasional variety reduces sensitivity of the LCT to the principle of wind energy development; • The generally small-medium scale landscape increases sensitivity.
Cultural, Heritage & Historic	• There are locally significant historic assets where impact on setting should be carefully considered; • Generally recreational use is locally significant with medium sensitivity.
Built Development & Settlement Pattern	• The influence of built development and vertical man-made structures makes some parts less sensitive but frequent human-scale features increases sensitivity to medium and large scale wind energy; • The mostly small scale, low density, dispersed settlement pattern is highly sensitive to wind energy that would be out of scale and increase the perception of human influence.
Perceptual & Visual	• Skylines are generally not prominent and intervisibility limited, but there are highly sensitive views and visual receptors increasing sensitivity;

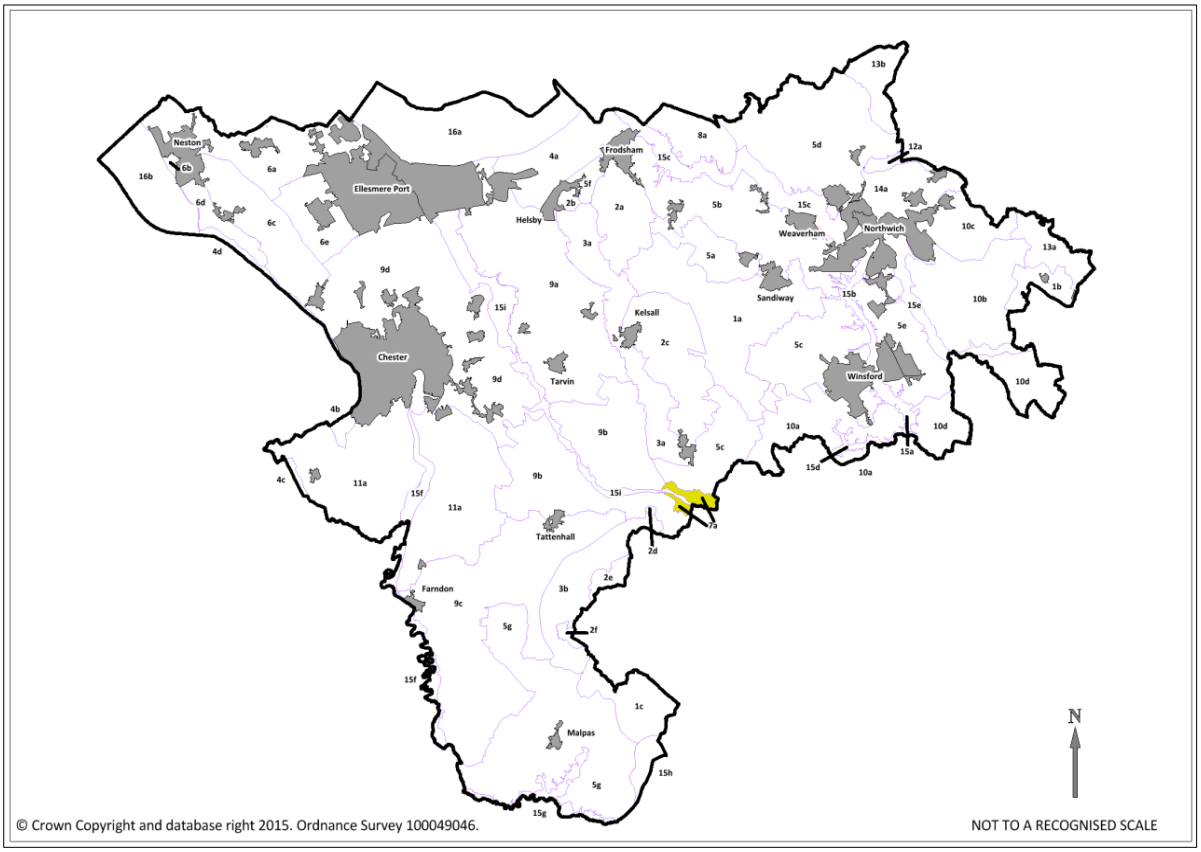
LCT 6 SENSITIVITY OF KEY CHARACTERISTICS TO WIND ENERGY DEVELOPMENT	
Sensitivity Attributes	**Summary of Sensitivity**
	• In general human activity reduces the sense of remoteness with occasional to frequent movement, although parts of the LCT are relatively tranquil with higher sensitivity.
Qualitative	• Generally pleasant scenic quality and some distinctiveness, with some areas designated as Areas of Special County Value (ASCV), of high sensitivity; • The LCT is a more common landscape in CWaC with some distinctive features. The LCT is sensitive to cumulative effects of a number of turbines that could alter landscape character and 'sense of place'.

LCT 6 WIND ENERGY SENSITIVITY ASSESSMENT				
LCA SENSITIVITY		**LCT 6 SENSITIVITY**		
LCA	**Sensitivity**	**Smaller Turbines [height 10m-30m]**	**Medium Turbines [height 30m-80m]**	**Larger Turbines [height 80m-130m+]**
6a	L-M	L-M	M	M-H
6b	M-H			
6c	M			
6d	M			
6e	L-M			

LCT 6 WIND ENERGY SENSITIVITY ANALYSIS
Sensitivity Analysis
• The generally small-medium scale landscape, frequent human-scale features and the mostly small scale, low density, dispersed settlement pattern makes this LCT particularly sensitive to medium and large scale wind energy development; • More remote and tranquil areas away from built influences where there is a perceived naturalness are even more highly sensitive to medium and large scale wind energy development; • Although skylines are not prominent or distinctive, this LCT is visually sensitive to turbines that interrupt key views from viewpoints or to important landmark features in adjacent landscapes, e.g. views across the Dee estuary into Wales; • Areas where there is more man-made influence from built development including prominent structures and transport infrastructure are less sensitive to medium and large scale wind energy development.
Turbine Groups
• The generally small-medium scale landscape, frequent human-scale features and the mostly small scale, low density, dispersed settlement pattern makes this LCT particularly sensitive to larger groups of 7-13 turbines; • There is more potential for single or small groups of up to 6 smaller turbines in more remote and tranquil areas away from built influences where there is a perceived naturalness; • There may be some potential for single and small groups of up to 6 medium turbines in identified "areas of least constraint" [*] in LCA 6a: *Willaston* and LCA 6c: *Neston to Saughall* where there is man-made influence from built development including prominent structures and transport infrastructure.

[*] Cheshire West & Chester Low Carbon and Renewable Energy Study, 2012

SENSITIVITY TO WIND ENERGY DEVELOPMENT
LCT 7: ROLLING FARMLAND



There is 1 Landscape Character Area within LCT 7:
LCA 7a: *Tiverton & Tilston*

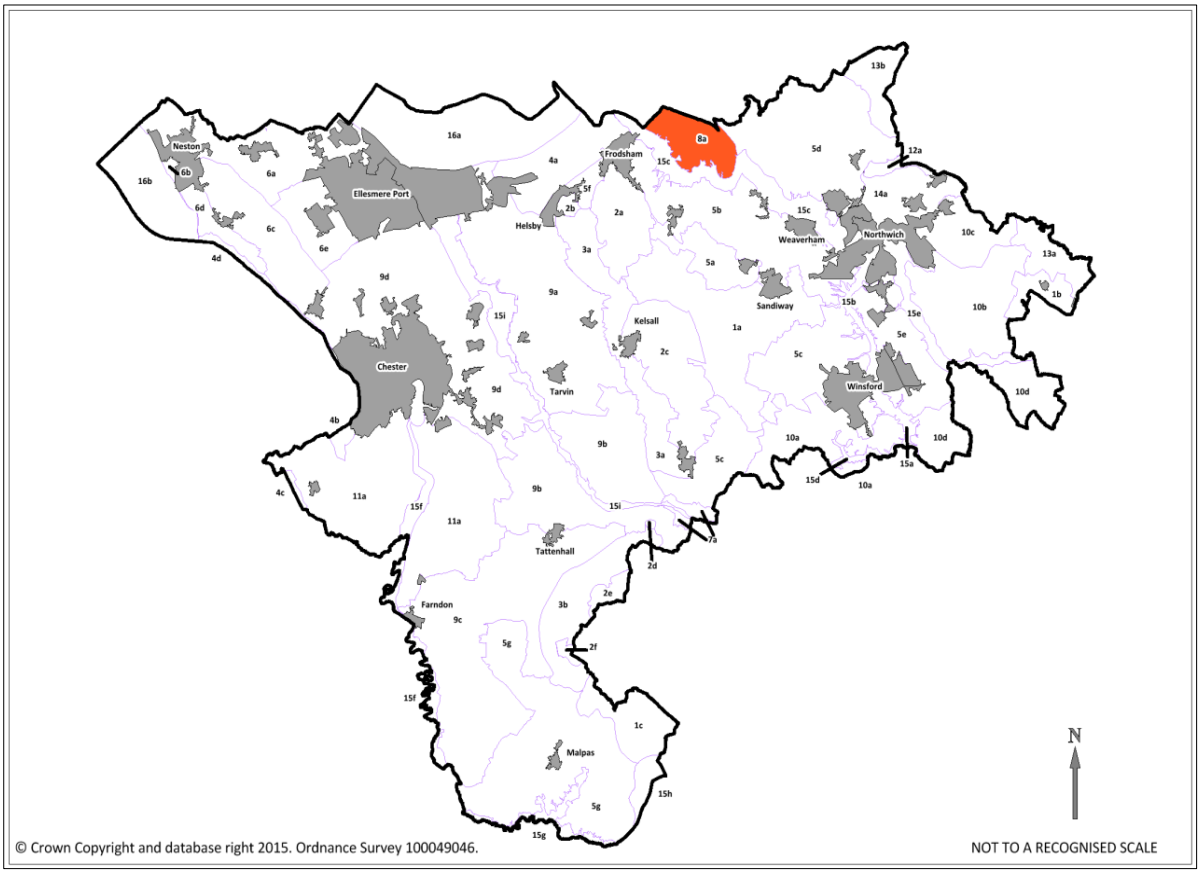
LCT 7 SENSITIVITY OF KEY CHARACTERISTICS TO WIND ENERGY DEVELOPMENT	
Sensitivity Attributes	**Summary of Sensitivity**
Natural & Physical	• The complex rolling topography and small to medium scale landscape make this LCT sensitive to wind energy development in principle.
Cultural, Heritage & Historic	• There are significant historic assets where impact on setting should be carefully considered; • The area is locally significant for recreational uses associated with the canal corridor.
Built Development & Settlement Pattern	• Some built development and man-made structures reduce sensitivity, but the presence of human-scale features and the mostly small scale, low density, dispersed settlement pattern increase sensitive to wind energy.
Perceptual & Visual	• The LCT is visually sensitive with prominent rolling skylines and views from high ground to important landmark features including Beeston Castle; • Activity within the road, canal and railway corridor reduces tranquillity and sensitivity, with frequent movement.

LCT 7 SENSITIVITY OF KEY CHARACTERISTICS TO WIND ENERGY DEVELOPMENT	
Sensitivity Attributes	**Summary of Sensitivity**
Qualitative	• Relatively high scenic quality of this distinctive landscape that is unique with CWaC.

LCT 7 WIND ENERGY SENSITIVITY ASSESSMENT					
LCA SENSITIVITY			**LCT 7 SENSITIVITY**		
LCA	**Sensitivity**		**Smaller Turbines [height 10m-30m]**	**Medium Turbines [height 30m-80m]**	**Larger Turbines [height 80m-130m+]**
7a	M-H		M	M-H	H

LCT 7 WIND ENERGY SENSITIVITY ANALYSIS
Sensitivity Analysis
• The complex rolling topography and small to medium scale landscape, presence of human-scale features, the mostly small scale, low density, dispersed settlement pattern, prominent rolling skylines and sensitive views means LCT 7 is particularly sensitive to the principle of wind energy development, and to medium and larger turbines in particular; • There are no pockets of identified “areas of least constraint” for large and medium scale wind development within the LCT; • Medium and larger turbines are unlikely to be accommodated within the LCT since it lies within the MOD low fly zone (see Figure 1).
Turbine Groups
• The combination of key characteristics of this LCT means it is likely to be particularly sensitive to larger groups of 7-13 turbines; • There may be some potential for single or small groups of up to 6 smaller turbines on the lower lying land if associated with human-scale features in the landscape such as road, railway and canal infrastructure and associated buildings, located away from sensitive skylines.

SENSITIVITY TO WIND ENERGY DEVELOPMENT
LCT 8: HEATHY FARMLAND & WOODLAND



There is only 1 Landscape Character Area within LCT 8:
LCA 8a: *Aston*

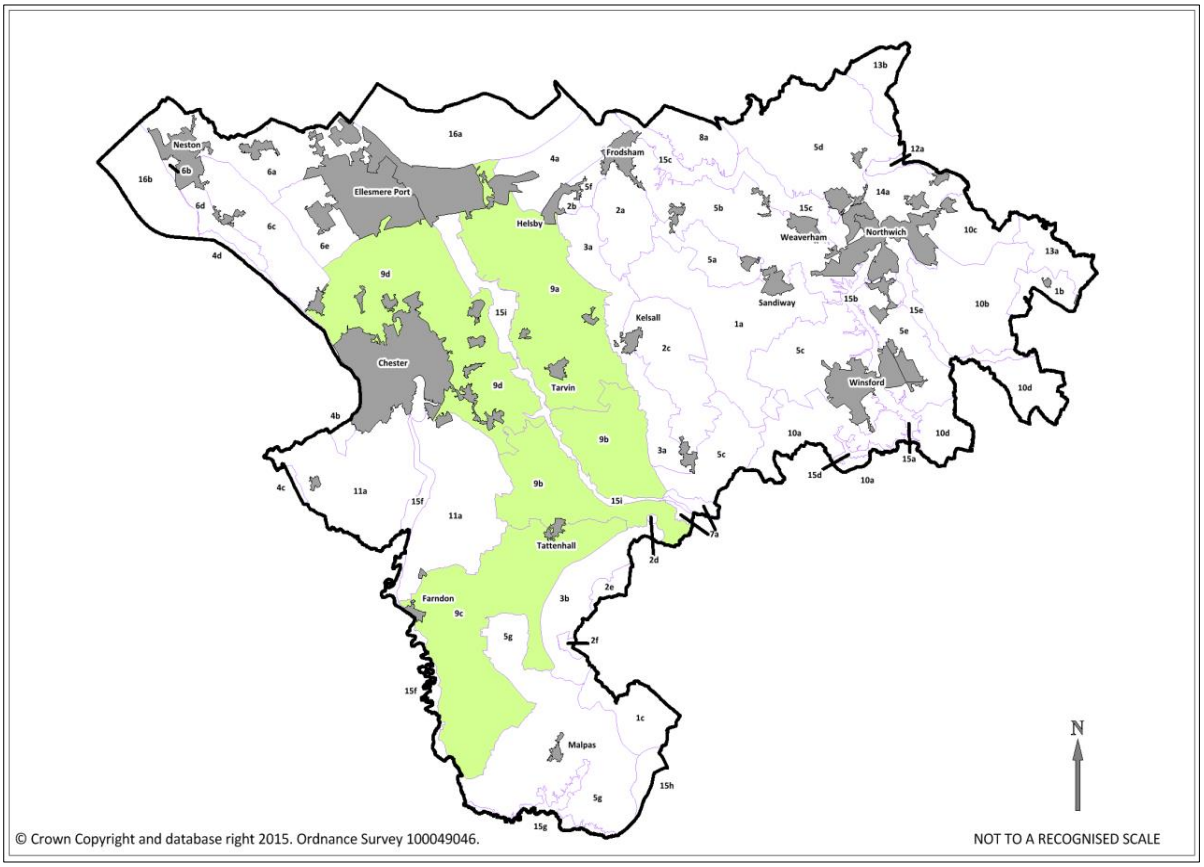
LCT 8 SENSITIVITY OF KEY CHARACTERISTICS TO WIND ENERGY DEVELOPMENT	
Sensitivity Attributes	**Summary of Sensitivity**
Natural & Physical	• The large scale, generally open, gently undulating topography and simple land cover make this LCT of low to moderate sensitivity to the principle of wind energy development.
Cultural, Heritage & Historic	• There are some historic assets where impact on setting should be carefully considered; • The area is not particularly sensitive in recreational land use terms.
Built Development & Settlement Pattern	• Built development and prominent man-made structures reduce sensitivity, but the presence of human-scale features and the mostly small scale, low density, dispersed settlement pattern increase sensitive to wind energy.
Perceptual & Visual	• The rising ground presents a prominent skyline and strong intervisibility and views to neighbouring landscapes; • Activity within the road, canal and railway corridor reduces tranquillity and sensitivity, with frequent movement.
Qualitative	• Relatively high scenic quality of this distinctive landscape that is unique with CWaC.

LCT 8 WIND ENERGY SENSITIVITY ASSESSMENT					
LCA SENSITIVITY			LCT 8 SENSITIVITY		
LCA	Sensitivity		Smaller Turbines [height 10m-30m]	Medium Turbines [height 30m-80m]	Larger Turbines [height 80m-130m+]
8a	M-H		L-M	M	M-H

LCT 8 WIND ENERGY SENSITIVITY ANALYSIS
Sensitivity Analysis
• The large scale landscape, sense of exposure, presence of built development and prominent man-made structures, increasing activity and reducing tranquillity, means this LCT could in principle accommodate medium and larger scale wind energy development; • However, the presence of human-scale features, the mostly small scale, low density, dispersed settlement pattern, prominent skyline and intervisibility means that some parts of LCT 8 are sensitive to larger turbines that could dominate the landscape.
Turbine Groups
• The presence of human-scale features, the mostly small scale, low density, dispersed settlement pattern, prominent skyline and intervisibility means that some parts of LCT 8 are sensitive to larger groups of 7-13 turbines that could dominate the landscape; • There may be some potential for single and small groups of up to 6 medium or larger turbines in identified "areas of least constraint" * where located close to the road, canal and railway corridor, although cumulative effects with other prominent vertical structures such as pylons would need to be carefully assessed; • There may be some potential for single or small groups of up to 6 smaller turbines on the lower lying land if associated with human-scale features in the landscape.

* Cheshire West & Chester Low Carbon and Renewable Energy Study, 2012

SENSITIVITY TO WIND ENERGY DEVELOPMENT
LCT 9: CHESHIRE PLAIN WEST



There are 4 Landscape Character Areas within LCT 9:
LCA 9a: *Dunham to Tarvin Plain*; LCA 9b: *Hargrave, Hoofield & Beeston Plain*;
LCA 9c: *Tattenhall to Shocklach Plain*; LCA 9d: *Saughall to Waverton Plain*

LCT 9 SENSITIVITY OF KEY CHARACTERISTICS TO WIND ENERGY DEVELOPMENT	
Sensitivity Attributes	**Summary of Sensitivity**
Natural & Physical	• The large scale, generally open, flat uniform landscape reduces sensitivity of the LCT to the principle of wind energy development.
Cultural, Heritage & Historic	• There are some significant historic assets where impact on setting and historic landscape character should be carefully considered; • Recreational use is locally significant with medium sensitivity.
Built Development & Settlement Pattern	• The influence of built development and vertical man-made structures makes some parts less sensitive but frequent human-scale features increases sensitivity to medium and large scale wind energy; • The mostly small scale, low density, dispersed settlement pattern is highly sensitive to wind energy that would be out of scale and increase the perception of human influence.
Perceptual & Visual	• The sandstone ridge provides a prominent and distinctive skyline with highly sensitive intervisibility and important views; • Generally a tranquil landscape with limited movement and thus high sensitivity, although the west of the LCT is less remote with frequent movement around Chester and the motorway corridor.

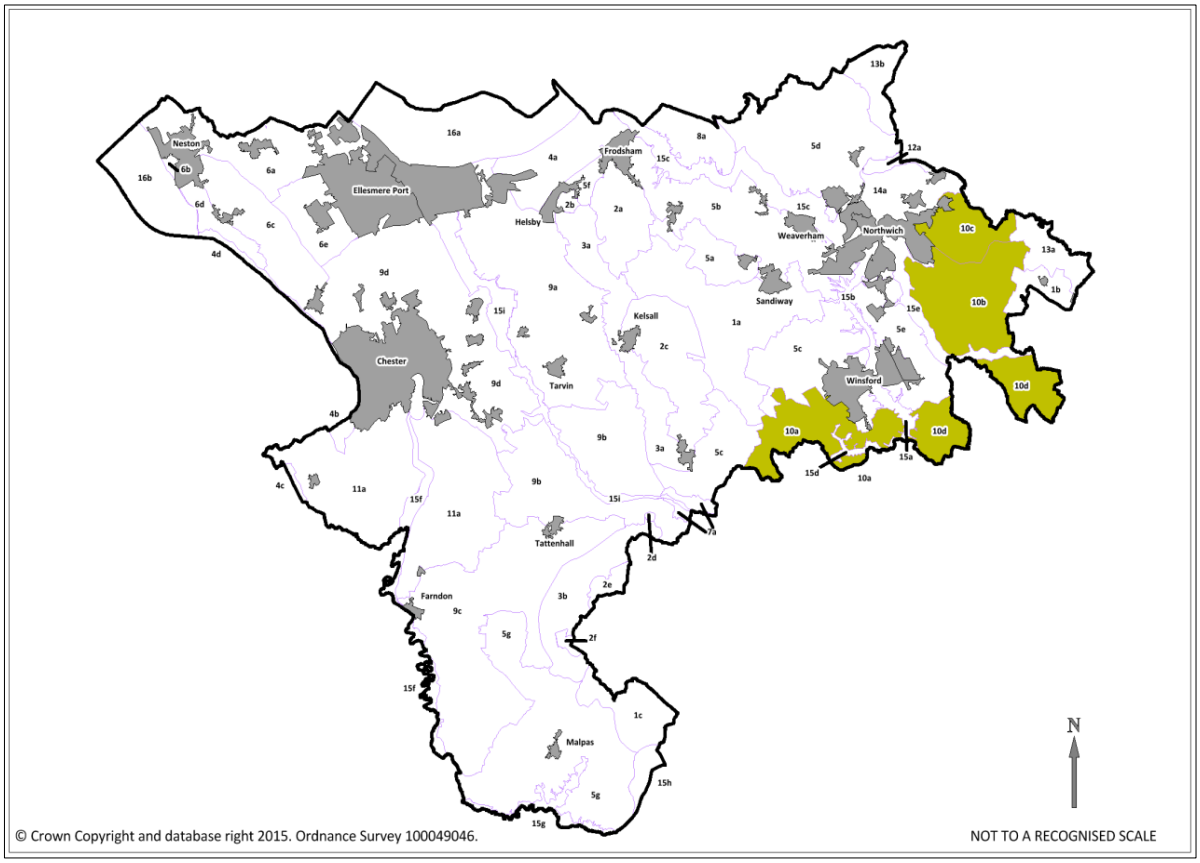
LCT 9 SENSITIVITY OF KEY CHARACTERISTICS TO WIND ENERGY DEVELOPMENT	
Sensitivity Attributes	**Summary of Sensitivity**
Qualitative	• A common landscape but the pastoral plain is representative of CWaC with pleasant scenic quality and thus sensitive to development that affects the characteristic sense of place.

LCT 9 WIND ENERGY SENSITIVITY ASSESSMENT				
LCA SENSITIVITY		**LCT 9 SENSITIVITY**		
LCA	**Sensitivity**	**Smaller Turbines [height 10m-30m]**	**Medium Turbines [height 30m-80m]**	**Larger Turbines [height 80m-130m+]**
9a	M	M	M-H	H
9b	M-H			
9c	M-H			
9d	M			

LCT 9 WIND ENERGY SENSITIVITY ANALYSIS
Sensitivity Analysis
• The large scale, generally open, flat uniform landscape, the influence of built development and vertical man-made structures, reduces sensitivity of the LCT to the principle of wind energy development; • However, the frequent human-scale features and the mostly small scale, low density, dispersed settlement pattern makes this LCT particularly sensitive to medium and large scale wind energy development; • More remote and tranquil areas away from built influences where there is a perceived naturalness are even more highly sensitive to medium and large scale wind energy development; • This LCT is visually sensitive to turbines that interrupt key views to important landmark features in adjacent landscapes, e.g. views across the plain to the iconic hillforts and castles on the sandstone ridge; • Areas where there is more man-made influence from built development including prominent structures and transport infrastructure are less sensitive to medium wind energy development; • Medium and larger turbines are unlikely to be accommodated within the southern part of the LCT that lies within the MOD low fly zone (see Figure 1).
Turbine Groups
• The frequent human-scale features and the mostly small scale, low density, dispersed settlement pattern makes this LCT particularly sensitive to larger groups of 7-13 turbines; • There is more potential for single smaller turbines within more remote and tranquil areas away from built influences where there is a perceived naturalness; • There may be some potential for single and small groups of up to 6 medium turbines in identified "areas of least constraint" [*] in LCA 9a: *Dunham to Tarvin Plain* and LCA 9d: *Saughall to Waverton Plain.*

[*] Cheshire West & Chester Low Carbon and Renewable Energy Study, 2012

SENSITIVITY TO WIND ENERGY DEVELOPMENT
LCT 10: CHESHIRE PLAIN EAST



There are 4 Landscape Character Areas within LCT 10:
LCA 10a: *Darnhall Plain*; LCA 10b: *Stublach Plain*; LCA 10c: *Lostock Plain*;
LCA 10d: *Wimboldsley and Sproston Plain*

LCT 10 SENSITIVITY OF KEY CHARACTERISTICS TO WIND ENERGY DEVELOPMENT	
Sensitivity Attributes	**Summary of Sensitivity**
Natural & Physical	• The large scale, generally open, flat uniform landscape reduces sensitivity of the LCT to the principle of wind energy development.
Cultural, Heritage & Historic	• There are some significant historic assets where impact on setting and historic landscape character should be carefully considered; • Low level of recreational use is of low to medium sensitivity.
Built Development & Settlement Pattern	• The influence of built development and vertical man-made structures makes the LCT less sensitive but frequent human-scale features increases sensitivity to medium and large scale wind energy; • The mostly small scale, low density, dispersed settlement pattern is highly sensitive to wind energy that would be out of scale and increase the perception of human influence.
Perceptual & Visual	• Skylines are generally not prominent, with locally significant views, limited intervisibility and visual receptors reducing sensitivity; however LCA 10a: *Darnhall Plain* is the exception where there is strong intervisibility and wider ranging views increasing sensitivity to medium and large scale wind energy;

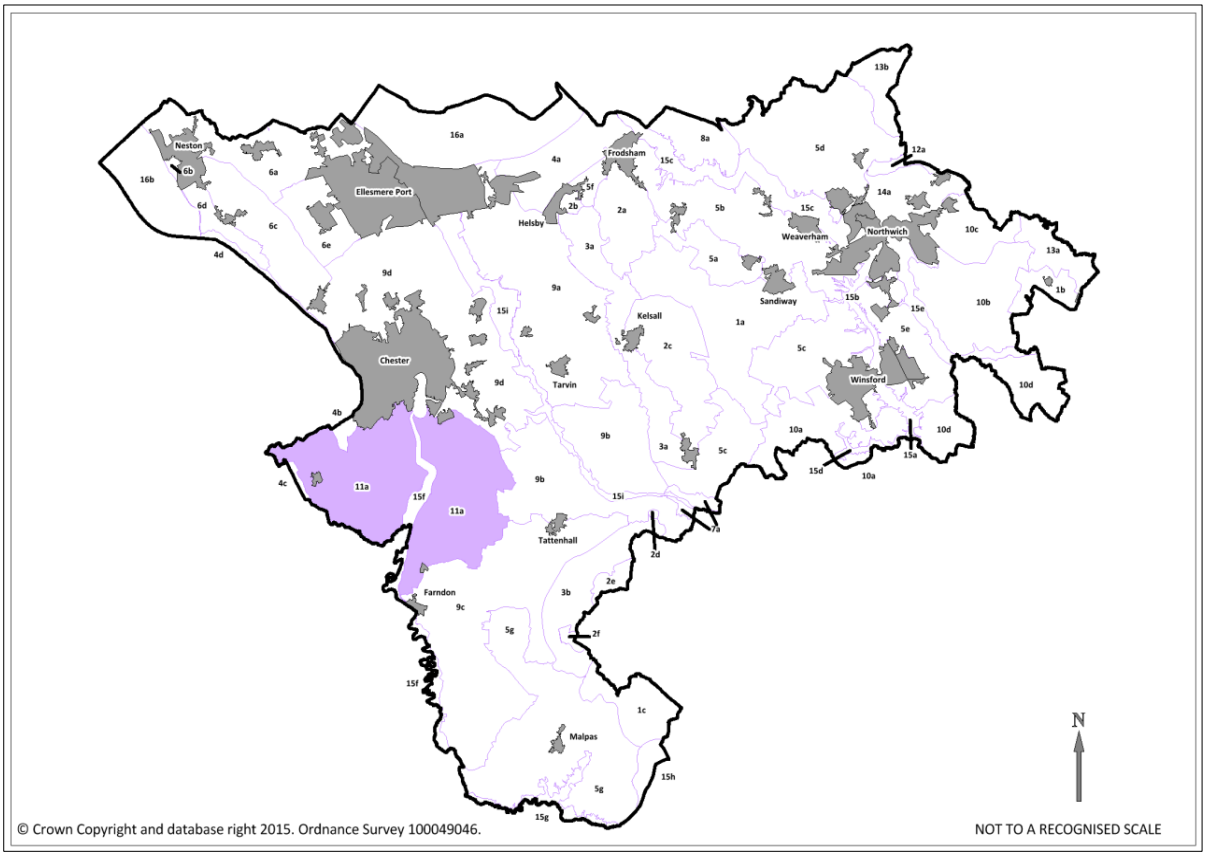
LCT 10 SENSITIVITY OF KEY CHARACTERISTICS TO WIND ENERGY DEVELOPMENT	
Sensitivity Attributes	**Summary of Sensitivity**
	• In general human activity reduces the sense of remoteness with occasional to frequent movement, although LCA 10a: *Darnhall Plain* is tranquil with little human activity or movement.
Qualitative	• In general the pastoral plain is a common landscape representative of CWaC with pleasant scenic quality and thus sensitive to development that affects the characteristic sense of place; • However parts of the landscape is more distinctive being influenced by features associated with the brine/salt extraction and gas storage industries with a historical land use legacy increasing sensitivity.

LCT 10 WIND ENERGY SENSITIVITY ASSESSMENT				
LCA SENSITIVITY		**LCT 10 SENSITIVITY**		
LCA	**Sensitivity**	**Smaller Turbines [height 10m-30m]**	**Medium Turbines [height 30m-80m]**	**Larger Turbines [height 80m-130m+]**
10a	M	L-M	M	M-H
10b	L-M			
10c	L-M			
10d	L-M			

LCT 10 WIND ENERGY SENSITIVITY ANALYSIS
Sensitivity Analysis
• The large scale, generally open, flat uniform landscape, the influence of built development and vertical man-made structures, reduces sensitivity of the LCT to the principle of wind energy development; • However, the frequent human-scale features and the mostly small scale, low density, dispersed settlement pattern makes this LCT particularly sensitive to medium and large scale wind energy development; • More remote and tranquil areas away from built influences where there is a perceived naturalness are even more highly sensitive to medium and large scale wind energy development; • LCA 10a: *Darnhall Plain* is visually sensitive to turbines that interrupt key views to important landmark features in adjacent landscapes, e.g. views to church spires; • Areas where there is more man-made influence from built development especially features associated with the brine/salt extraction and gas storage industries are less sensitive to medium scale wind energy development; • Medium and larger turbines are unlikely to be accommodated within parts of LCA 10a: *Darnhall Plain* and LCA 10d: *Wimboldsley and Sproston Plain* that lie within the MOD low fly zone (see Figure 1).
Turbine Groups
• The frequent human-scale features and the mostly small scale, low density, dispersed settlement pattern makes this LCT particularly sensitive to larger groups of 7-13 turbines; • There is more potential for single smaller turbines within more remote and tranquil areas away from built influences where there is a perceived naturalness; • There may be some potential for single and small groups of up to 6 medium or larger turbines in identified "areas of least constraint" [*] in LCA 10b*: Stublach Plain.*

[*] Cheshire West & Chester Low Carbon and Renewable Energy Study, 2012

SENSITIVITY TO WIND ENERGY DEVELOPMENT
LCT 11: ESTATE FARMLAND



There is 1 Landscape Character Area within LCT 11:
LCA 11a: *Grosvenor Estate*

LCT 11 SENSITIVITY OF KEY CHARACTERISTICS TO WIND ENERGY DEVELOPMENT	
Sensitivity Attributes	**Summary of Sensitivity**
Natural & Physical	• The simple, uniform gently undulating landform of medium scale make this LCT of moderate overall sensitivity to the principle of wind energy development, although sensitivity is increased in enclosed locations where turbines could be out of scale.
Cultural, Heritage & Historic	• The LCT is of high historic value and contains significant historic assets where wind energy could impact on setting and on historic landscape character; • The area is not particularly sensitive in recreational land use terms.
Built Development & Settlement Pattern	• Some modern built development lacks prominence with reduced sensitivity, but the presence of frequent human-scale features and the mostly small scale, low density, dispersed settlement pattern increase sensitive to wind energy that would be out of scale and increase the perception of human influence.
Perceptual & Visual	• A moderately sensitive landscape in visual terms where the skyline has some prominence but is undistinctive, with some intervisibility but important views to landmark features increases sensitivity; • Some human activity and movement in the landscape reduces the sense of remoteness.

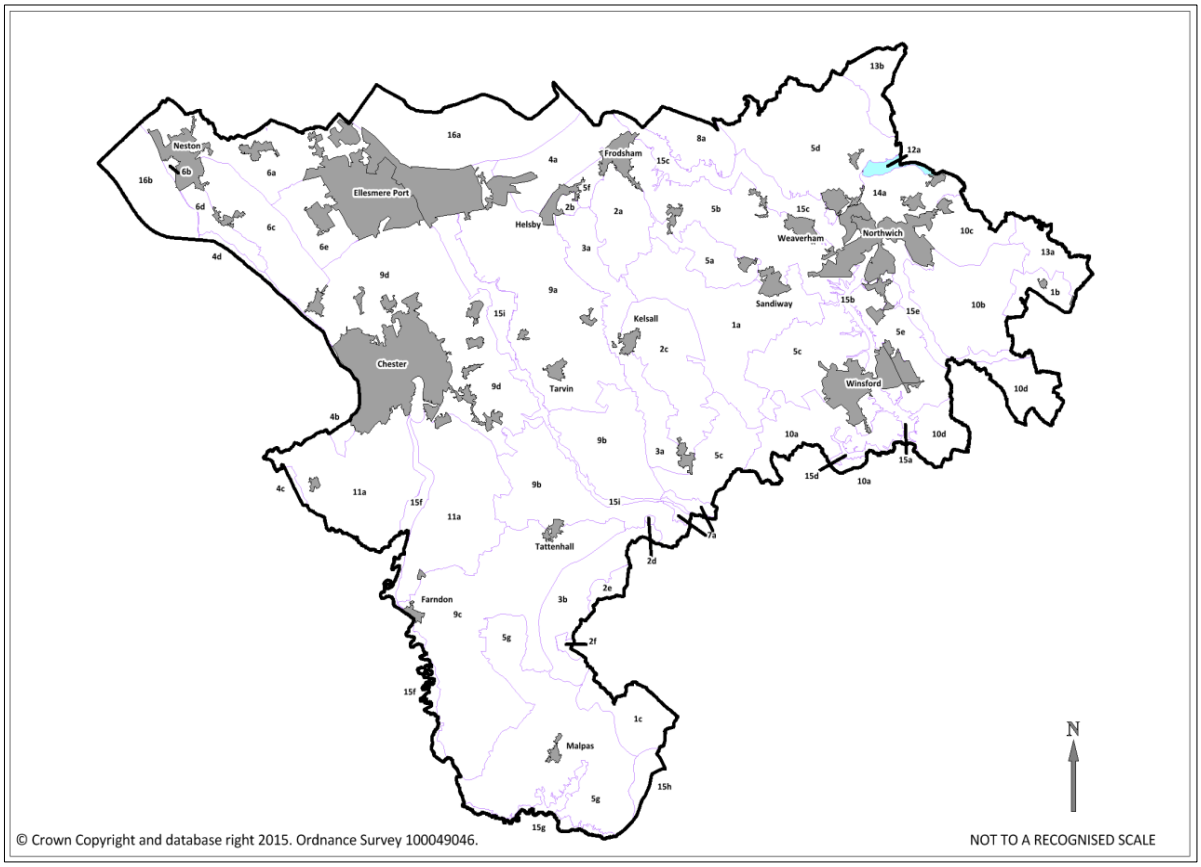
LCT 11 SENSITIVITY OF KEY CHARACTERISTICS TO WIND ENERGY DEVELOPMENT	
Sensitivity Attributes	**Summary of Sensitivity**
Qualitative	• This is a unique, distinctive landscape of high scenic quality mostly designated as an Area of Special County Value (ASCV), and thus highly sensitive to wind energy development.

LCT 11 WIND ENERGY SENSITIVITY ASSESSMENT				
LCA SENSITIVITY			**LCT 11 SENSITIVITY**	
LCA	**Sensitivity**	**Smaller Turbines [height 10m-30m]**	**Medium Turbines [height 30m-80m]**	**Larger Turbines [height 80m-130m+]**
11a	M-H	M	M-H	H

LCT 11 WIND ENERGY SENSITIVITY ANALYSIS
Sensitivity Analysis
• The high scenic quality and unique distinctive landscape of high historic value is highly sensitive to the principle of wind energy development. Larger turbines would dominate and adversely affect these key characteristics; • The presence of human-scale features and the mostly small scale, low density, dispersed settlement pattern also means that the LCT is sensitive to larger turbines that could dominate the landscape; • Medium and larger turbines are unlikely to be accommodated within the LCT which lies within the MOD low fly zone (see Figure 1).
Turbine Groups
• Larger groups of 7-13 turbines would dominate and adversely affect the key characteristics of this LCT; • The presence of human-scale features and the mostly small scale, low density, dispersed settlement pattern also means that the LCT is sensitive to larger groups of turbines that could dominate the landscape; • There may be some potential for single and small groups of up to 6 medium turbines in identified "areas of least constraint" * to the north of the busy A55 road corridor where associated with the Chester Business Park or Water Works; • There may be some potential for single or small groups of up to 6 smaller turbines where associated with human-scale features in the landscape and which do not interrupt important views.

* Cheshire West & Chester Low Carbon and Renewable Energy Study, 2012

SENSITIVITY TO WIND ENERGY DEVELOPMENT
LCT 12: MERE BASIN



There is 1 Landscape Character Area within LCT 12:
LCA 12a: *Budworth Mere*

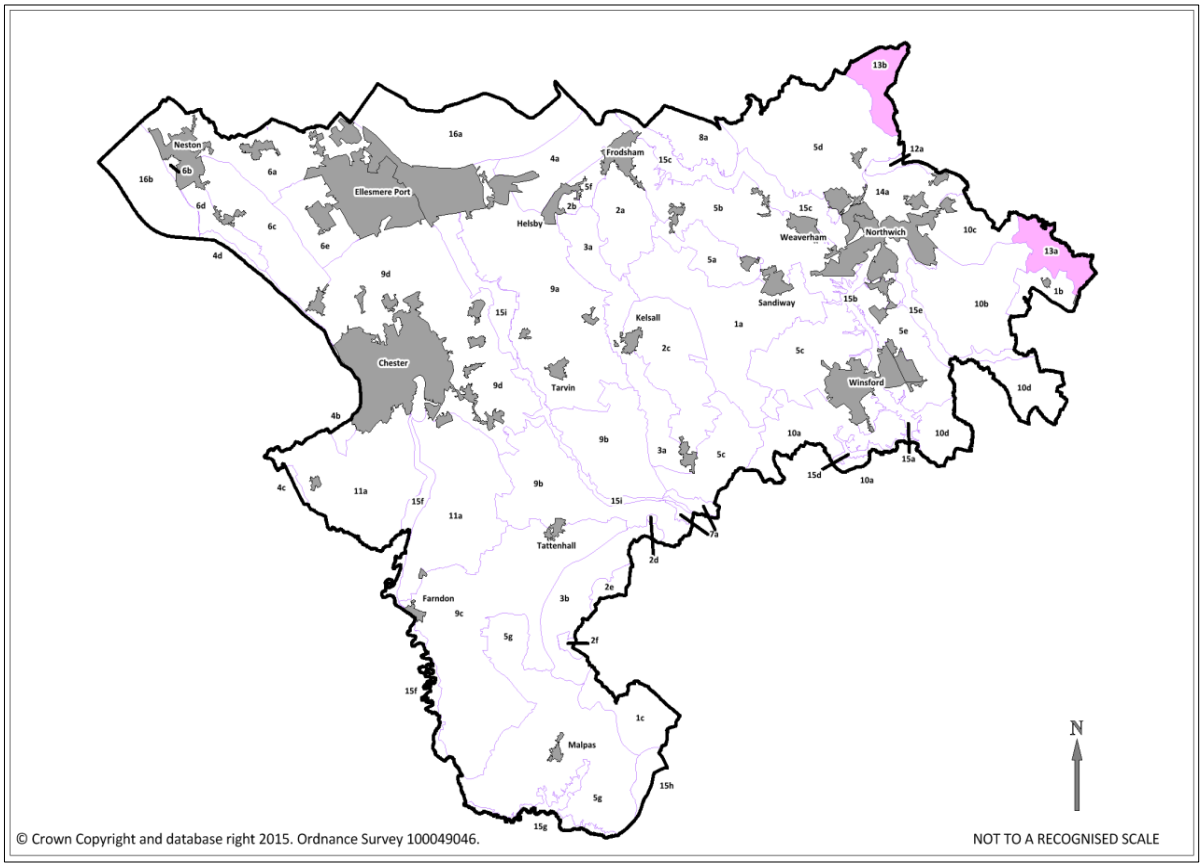
LCT 12 SENSITIVITY OF KEY CHARACTERISTICS TO WIND ENERGY DEVELOPMENT	
Sensitivity Attributes	**Summary of Sensitivity**
Natural & Physical	• The steep basin-like landform is small scale and enclosed by the rising topography on all sides, and with a mosaic of semi-natural habitats making it highly sensitive to the principle of wind energy development.
Cultural, Heritage & Historic	• There are few historic assets and only locally significant recreational use, reducing sensitivity;
Built Development & Settlement Pattern	• Built development and prominent man-made structures are very limited, increasing sensitivity, and the presence of human-scale features and the unsettled nature give a perceived naturalness and increased sensitive to wind energy.
Perceptual & Visual	• The skyline is not prominent but the simple ridgeline defining the top of the basin-like landscape forms a strong skyline from where views are locally significant with some intervisibility ; • Human activity and traffic movement within the road corridor reduces tranquillity and sensitivity, but generally there is a strong sense of tranquillity.
Qualitative	• A rarely occurring, distinctive landscape with some scenic quality.

LCT 12 WIND ENERGY SENSITIVITY ASSESSMENT					
LCA SENSITIVITY			LCT 12 SENSITIVITY		
LCA	Sensitivity		Smaller Turbines [height 10m-30m]	Medium Turbines [height 30m-80m]	Larger Turbines [height 80m-130m+]
12a	H		M-H	H	H

LCT 12 WIND ENERGY SENSITIVITY ANALYSIS
Sensitivity Analysis
• The steep basin-like landform, small scale enclosure and a mosaic of semi-natural habitats make this LCT highly sensitive to all scales of wind energy development. • The presence of human-scale features, the unsettled nature, strong skyline and strong sense of tranquillity away from the road corridor add to the highly sensitive nature of the landscape; • There are no identified "areas of least constraint" * for medium or large scale wind development in this LCT.
Turbine Groups
• There may be some potential for a single small turbine on the lower lying land if associated with human-scale features in the landscape.

* Cheshire West & Chester Low Carbon and Renewable Energy Study, 2012

SENSITIVITY TO WIND ENERGY DEVELOPMENT
LCT 13: LOWLAND FARMLAND & MOSSES



There are 2 Landscape Character Areas within LCT 13:
LCA 13a: *Peover*; LCA 13b: *Arley West*

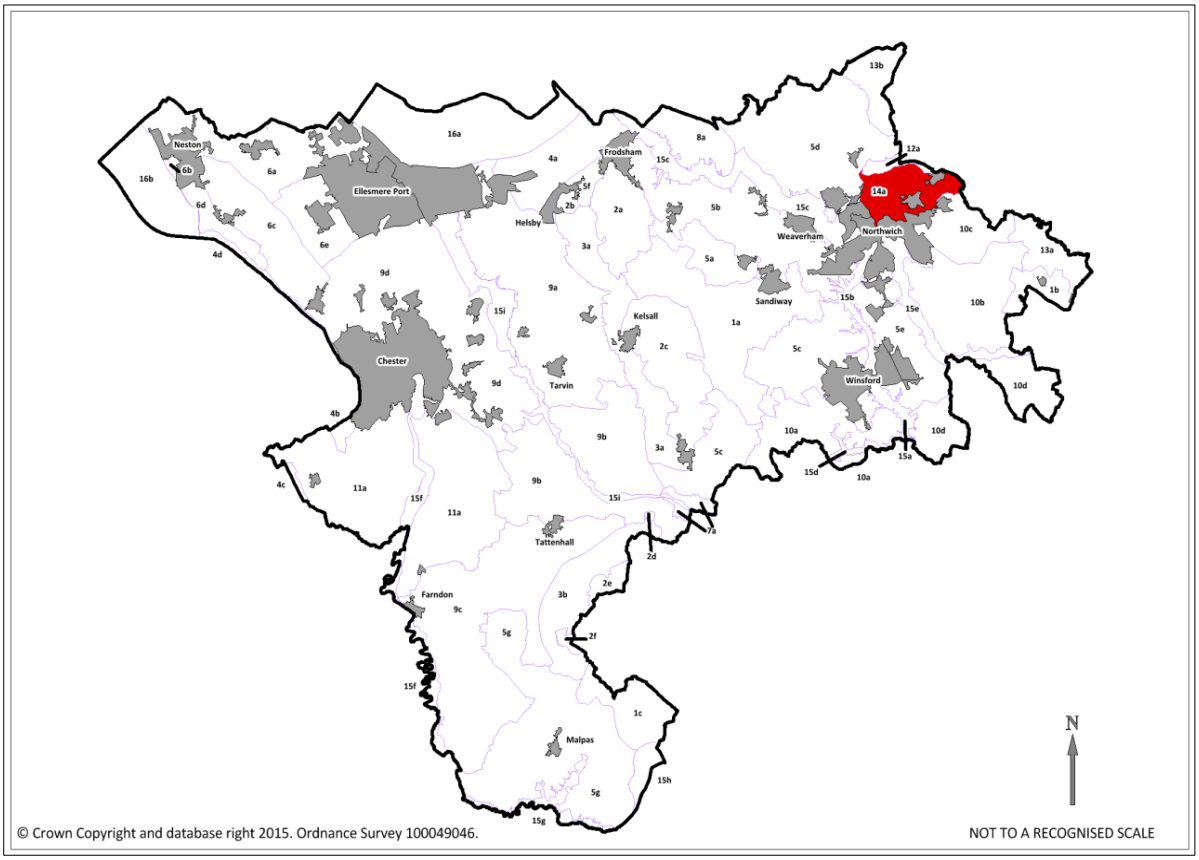
LCT 13 SENSITIVITY OF KEY CHARACTERISTICS TO WIND ENERGY DEVELOPMENT	
Sensitivity Attributes	**Summary of Sensitivity**
Natural & Physical	• The gently undulating, uniform landscape with simple land cover could potentially support wind energy development in principle; • The small scale and mostly enclosed landscape are features sensitive to wind energy.
Cultural, Heritage & Historic	• Historic assets are generally of local significance although impact on setting should be carefully considered; • Low level, informal local recreational use reduces sensitivity.
Built Development & Settlement Pattern	• Some built development but mostly limited, with frequent human-scale features, and a small scale, low density, dispersed settlement pattern which are highly sensitive to wind energy that would be out of scale and increase the perception of human influence.
Perceptual & Visual	• Skylines are not prominent, with limited views and intervisibility and generally moderate sensitivity to a limited range of visual receptors; • This is a tranquil landscape in places remote where movement is limited, making the LCT highly sensitive.
Qualitative	• A more common landscape with some distinctive features and overall medium scenic quality.

LCT 13 WIND ENERGY SENSITIVITY ASSESSMENT					
LCA SENSITIVITY			LCT 13 SENSITIVITY		
LCA	Sensitivity		Smaller Turbines [height 10m-30m]	Medium Turbines [height 30m-80m]	Larger Turbines [height 80m-130m+]
13a	M		M	M-H	H
13b	M-H				

LCT 13 WIND ENERGY SENSITIVITY ANALYSIS
Sensitivity Analysis
• The general intimacy of the small scale enclosed landscape, with frequent human-scale features, and tranquil and in places remote character make this LCT sensitive to medium and larger turbines; • There may be some potential for medium scale wind development if located in identified "areas of least constraint" * in LCA 13b: *Arley West* close to the M56 and M6 and away from the more tranquil and naturalistic locations; • Similarly there may be some potential for medium scale wind development if located in a small pocket of identified "area of least constraint" for large and medium scale wind development in LCA 13a: *Peover* close to the motorway as long as any turbines do not over-dominate the nearby settlement of Swan Green; • In the majority of LCA 13a: *Peover* beyond this small pocket of potential wind energy development, medium and larger turbines are unlikely to be accommodated because of the MOD low fly zone (see Figure 1).
Turbine Groups
• The combination of key characteristics of this LCT means it is likely to be particularly sensitive to larger groups of 7-13 turbines; • The greatest potential for wind energy development within LCT 13 is for smaller single turbines or small groups of up to 6 smaller turbines, if carefully located to avoid significant adverse landscape and visual effects, including cumulative effects.

* Cheshire West & Chester Low Carbon and Renewable Energy Study, 2012

SENSITIVITY TO WIND ENERGY DEVELOPMENT
LCT 14: SALT HERITAGE LANDSCAPE



There is 1 Landscape Character Area within LCT 14:
LCA 14a: *Northwich*

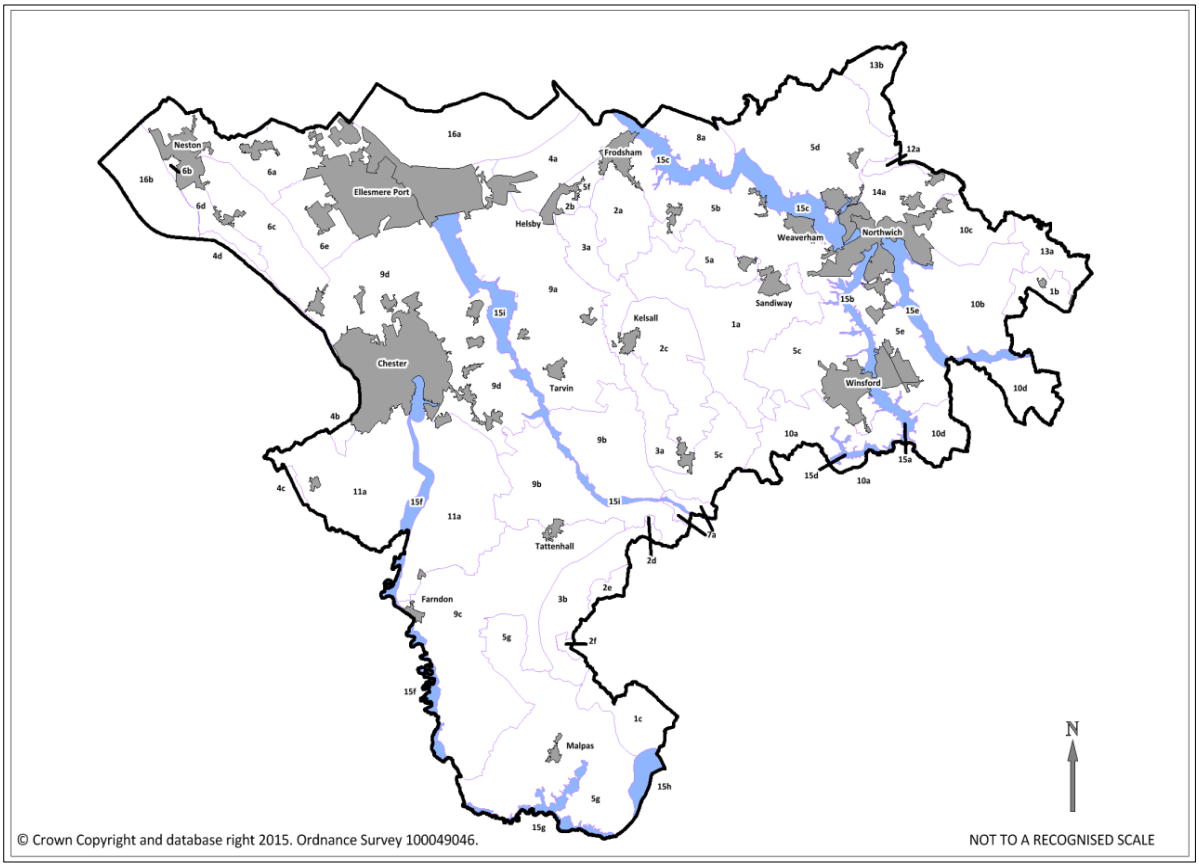
LCT 14 SENSITIVITY OF KEY CHARACTERISTICS TO WIND ENERGY DEVELOPMENT	
Sensitivity Attributes	**Summary of Sensitivity**
Natural & Physical	• A post-industrial landscape of subsidence flashes surrounded by a mosaic of land uses, within an otherwise flat landscape with potentially some sensitivity to wind energy development.
Cultural, Heritage & Historic	• Historic assets are generally of local significance although impact on setting should be carefully considered; • Well used for recreation which increases sensitivity.
Built Development & Settlement Pattern	• Frequent built development, infrastructure and industrial structures and brownfield land reduce sensitivity; • The lack of human-scale features and medium to large scale modern settlement pattern further reduce sensitivity.
Perceptual & Visual	• Generally not visually sensitive as the skyline is not prominent, with limited views and intervisibility although there is a high number of visual receptors; • Frequent movement reduces tranquillity and remoteness, and reduces sensitivity.
Qualitative	• A unique distinctive landscape in CWaC but with overall low scenic quality.

LCT 14 WIND ENERGY SENSITIVITY ASSESSMENT					
LCA SENSITIVITY			LCT 14 SENSITIVITY		
LCA	Sensitivity		Smaller Turbines [height 10m-30m]	Medium Turbines [height 30m-80m]	Larger Turbines [height 80m-130m+]
14a	L-M		L-M	M	M-H

LCT 14 WIND ENERGY SENSITIVITY ANALYSIS
Sensitivity Analysis
• The presence of industry and derelict land, and the lack of human-scale features means there is some potential to locate smaller, medium and larger wind turbines that may not be out of scale or dominate the landscape; • Turbines would potentially be in keeping with the large scale structures and modern settlement pattern, but larger turbines could be over-bearing if insensitively sited close to residential property; • There are no identified "areas of least constraint" * for large and medium scale wind development in the LCT.
Turbine Groups
• Larger groups of turbines could create a confusing appearance with the varied heights of existing industrial uses; • The greatest potential for wind energy development within LCT 14 is for single turbines or small groups of up to 6 turbines.

* Cheshire West & Chester Low Carbon and Renewable Energy Study, 2012

SENSITIVITY TO WIND ENERGY DEVELOPMENT
LCT 15: RIVER VALLEYS



There are 9 Landscape Character Areas within LCT 15:
LCA 15a: *Upper Weaver Valley;* LCA 15b: *Mid Weaver Valley;* LCA 15c: *Lower Weaver Valley;* LCA 15d: *Ash Brook Valley;* LCA 15e: *Dane Valley;* LCA 15f: *Dee Valley;* LCA 15g: *Wych Valley;* LCA 15h: *Grindley Valley;* LCA 15i: *Gowy Valley*

LCT 15 SENSITIVITY OF KEY CHARACTERISTICS TO WIND ENERGY DEVELOPMENT	
Sensitivity Attributes	**Summary of Sensitivity**
Natural & Physical	• Generally steep valley sides, often wooded with small scale enclosure make this LCT particularly sensitive to wind energy development in principle. However, there are areas of lower sensitivity where valleys are wider, less steep and scale is larger.
Cultural, Heritage & Historic	• The presence of historic assets varies greatly throughout the landscape making this LCT more or less sensitive to wind energy development in principle; • Recreational use also varies throughout the landscape.
Built Development & Settlement Pattern	• Existing built development and prominent structures give some areas lower sensitivity, but other areas are highly sensitive where built development is limited or absent; • The river valleys are mostly unsettled or with a small scale, low density, dispersed settlement pattern which is highly sensitive to wind energy development that would be out of scale and increase the perception of human influence.

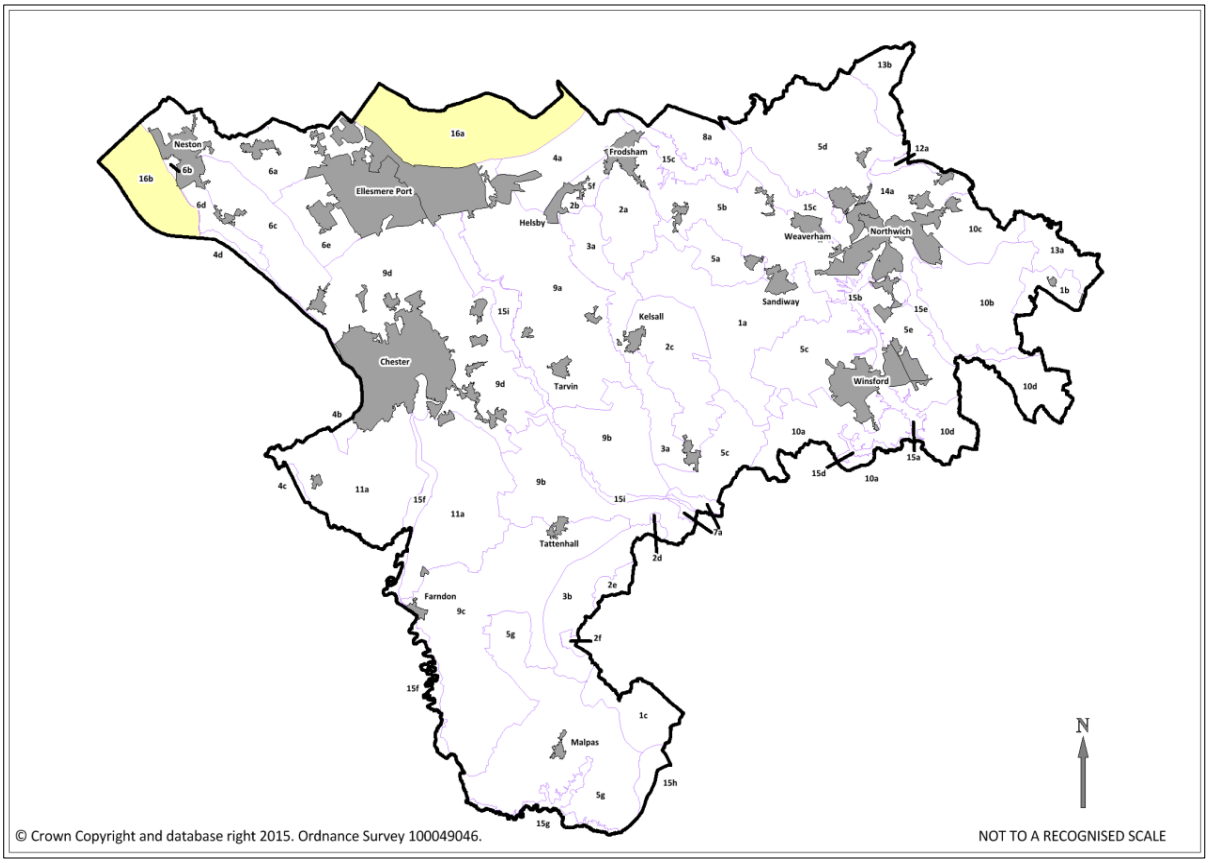
LCT 15 SENSITIVITY OF KEY CHARACTERISTICS TO WIND ENERGY DEVELOPMENT	
Sensitivity Attributes	**Summary of Sensitivity**
Perceptual & Visual	• Skylines are prominent and distinctive with little or no development and thus highly sensitive to tall wind turbines, although intervisibility, views and visual receptors are generally limited, with reduced sensitivity; • Strong sense of tranquillity and remoteness in places where activity and movement is limited.
Qualitative	• Distinctive valleys mostly of high scenic quality, especially the *Upper, Mid and Lower Weaver Valley* and the *Wych Valley* designated as Areas of Special County Value (ASCV), with high sensitivity to the principle of wind energy development.

LCT 15 WIND ENERGY SENSITIVITY ASSESSMENT				
LCA SENSITIVITY		**LCT 15 SENSITIVITY**		
LCA	**Sensitivity**	**Smaller Turbines [height 10m-30m]**	**Medium Turbines [height 30m-80m]**	**Larger Turbines [height 80m-130m+]**
15a	H	M	M-H	H
15b	H			
15c	M-H			
15d	H			
15e	M-H			
15f	M-H			
15g	H			
15h	M-H			
15i	M			

LCT 15 WIND ENERGY SENSITIVITY ANALYSIS
Sensitivity Analysis
• The steep wooded valley sides, small scale enclosure, lack of built development and settlement, prominent distinctive skylines, strong sense of tranquillity and scenic quality make some river valleys highly sensitive to all sizes and numbers of wind turbines; • Other locations where valleys are flatter and wider, less steep and where landscape scale is larger, and where they are influenced by built development, infrastructure and prominent structures which reduces tranquillity, are less sensitive to wind energy although medium and larger turbines are likely to be over dominant; • Technically identified "areas of least constraint" for large and medium scale wind development [*] in LCA 15i *Gowy Valley* could potentially accommodate turbines at its northern end close to the motorway corridor and industrial structures in Ellesmere Port; • Medium and larger turbines are unlikely to be accommodated within southern reaches of LCA 15i: *Gowy Valley* and *15f: Dee Valley* which lie within the MOD low fly zone (see Figure 1).
Turbine Groups
• There may be some potential for single or small groups of up to 6 smaller turbines within low lying flatter locations that avoid the skyline and sensitive views.

[*] Cheshire West & Chester Low Carbon and Renewable Energy Study, 2012

SENSITIVITY TO WIND ENERGY DEVELOPMENT
LCT 16: MUDFLATS & SALTMARSH



There are 2 Landscape Character Areas within LCT 16:
LCA 16a: *Stanlow and Ince Banks*; LCA 16b: *Dee Estuary*

LCT 16 SENSITIVITY OF KEY CHARACTERISTICS TO WIND ENERGY DEVELOPMENT	
Sensitivity Attributes	**Summary of Sensitivity**
Natural & Physical	• The large scale, open exposed flat uniform, low lying landscape with simple limited land cover means that in general there may be some potential for wind energy development in principle.
Cultural, Heritage & Historic	• Historic assets are few or of little significance; • Little or no recreational use, limiting sensitivity.
Built Development & Settlement Pattern	• Lack of any built development on the mudflats and saltmarsh but their character is heavily influenced by frequent development and large industrial structures in adjacent landscapes; • Devoid of any settlement, with high sensitivity.
Perceptual & Visual	• Flat low lying area with no prominent skyline, although there is extensive visibility and important views across the flats and estuary; LCA 16a: *Stanlow and Ince Banks* is seen in panoramic views from the sandstone ridge at Frodsham and Helsby; • The mudflats and saltmarsh are still and tranquil and thus highly sensitive.
Qualitative	• High scenic quality, rarity and distinctiveness make this LCT highly sensitive to the principle of wind energy development.

LCT 16 WIND ENERGY SENSITIVITY ASSESSMENT					
LCA SENSITIVITY			LCT 16 SENSITIVITY		
LCA	Sensitivity		Smaller Turbines [height 10m-30m]	Medium Turbines [height 30m-80m]	Larger Turbines [height 80m-130m+]
16a	H		H	H	H
16b	H				

LCT 16 WIND ENERGY SENSITIVITY ANALYSIS
Sensitivity Analysis
• Probably the rarest, most distinctive, naturalistic, tranquil and remote landscape in CWaC, considered to be highly sensitive to any size and number of wind energy development; • Turbines and associated infrastructure would bring a perception of human influence in landscapes currently devoid of built development and man-made structures where there is a perception of naturalness; • The large scale, open exposed flat uniform, low lying landscape with simple limited land cover may be of low sensitivity in principle to wind energy development, but the extensive intervisibility would make even the smallest turbine prominent in the landscape for some distance. Intervisibility with the sandstone ridge increases sensitivity of LCA 16a: *Stanlow and Ince Banks* where it would be seen in panoramic views from the ridge.
Turbine Groups
• The combination of key characteristics of this LCT means it is highly sensitive to single and all groupings of turbines.

5. Sensitivity to Solar Photovoltaic Development

Types of solar photovoltaic development

5.1 The study considers ground mounted solar photovoltaic (PV) energy developments comprising a number of solar panels arranged in lines and secured on frames attached to the ground. These are known as solar arrays or solar farms. The study does not consider small scale microgeneration solar systems that are usually integrated into buildings.

5.2 Solar PV developments included in this study are those considered most likely to come forward in CWaC. A review of planning applications and permissions over the past five years or so gives an indication of likely size of solar PV arrays as summarised in paragraph 1.11.

5.3 The following solar PV arrays are considered in this study:

Very small solar farm: <1ha (<2.5acres)
Small solar farm: 1ha-6ha (2.5acres-15acres)
Medium solar farm: 6ha-15ha (15acres-37acres)
Large solar farm: 15ha-25ha (37acres- 63acres)
Very large solar farm: >25ha (>63acres)

5.4 Solar panels are typically in the order of 1m x 1.6m, inclined to between 20^0-30^0 with the lower part approximately 60-80cm from ground level and the higher part up to 3m from the ground. Distance between the rows of panels is between 4-6m to avoid overshadowing. Associated development includes several inverter stations and switchgear structures approximately 4.5m long x 2.5m wide x 2.5m high. Frames and panels are usually brought to site ready-made.

Assessment criteria

5.5 Similar criteria as those defined to assess sensitivity to wind energy (in Section 4) have been defined to assess sensitivity to solar PV development, using the 2016 Landscape Strategy as the basis for the assessment. Again, the criteria closely reflect the key characteristics, sensitivities, qualities and value of each LCT and LCA as described in the Strategy.

5.6 The criteria for assessing sensitivity to solar PV developments differ slightly to those defined to assess sensitivity to wind energy, to reflect differences in the particular way that ground-mounted solar PV developments can affect the landscape. For example, perceptions of remoteness and movement in the landscape are not a consideration with solar farms where there are no moving parts. Furthermore, it may be possible to screen solar arrays whereas even the smallest wind turbines are likely to be noticeable or prominent in some views. Some of the key landscape effects of solar PV developments are:

- Undulating, rolling or steeply sloping landforms, and prominent skylines and ridges are likely to be more visually sensitive, especially where there are receptors looking up from lower ground;
- Being angled towards the sun, solar arrays have a front and a back view where there could be visual impacts from glint and glare within an arc of view greater than that simply experienced by north-facing receptors;
- Flat landscapes will be sensitive where they are open and exposed, with extensive visibility, especially where there are receptors looking down from higher ground;
- Smaller solar arrays could be acceptable in a small scale, intricate landscape where there are human-scale landscape features such as hedgerows and trees which can form strong boundary features reducing a zone of theoretical visibility (ZTV) to zero;
- Mitigation could include the planting of new hedgerows and trees that could provide a screen to reduce adverse effects of solar arrays;
- Large solar farms are unlikely to be appropriate in a small scale intricate landscape where they may appear out of scale and where traditional landscape features may have to be removed;
- Associated development such as new access tracks, inverter stations and switchgear structures can necessitate the removal of landscape features such as trees, hedgerows, orchards and ponds;
- Solar arrays and associated infrastructure can bring a perception of human influence in landscapes currently devoid of built development;
- Associated security measures such as fencing and lighting can result in additional effects.

5.7 A matrix was developed with a standardised set of criteria to represent the key characteristic features of each LCA as recorded in the 2016 Landscape Strategy. The key characteristics most likely to be affected by wind energy development are recorded under the same five headings as used in the wind energy assessment described in Section 4, as follows:

- Natural & physical attributes
- Cultural, heritage & historic attributes
- Built development & settlement pattern
- Perceptual & visual attributes
- Qualitative attributes

5.8 The characteristics recorded are defined in **Table 4** below:

Table 4: Definition of Criteria for Assessing Sensitivity to Solar PV Development

NATURAL & PHYSICAL LANDSCAPE CRITERIA	
Landform	The shape, elevation and change in relief of the physical landscape, ranging from simple and consistent, such as the flat pastoral plain, to more rugged and dramatic such as rocky sandstone cliffs and outcrops, or steep valley sides.
Land cover pattern	The pattern of land uses within a landscape, from the continuous monoculture of large parts of the plain or plantation forests, to mosaic assemblages of small fields, hedgerows, ponds and woodlands. Landscape pattern is closely related to scale.
Scale of field pattern & landscape features	The relative scale of land cover patterns of fields, hedgerows and trees, and other human-scale features in the landscape such as traditional agricultural buildings and sandstone walls. Landscape scale is closely related to visibility and the extent of views, and how the landscape is experienced.
Enclosure	The way in which landforms enclose the landscape, or open out into other landscapes.
CULTURAL, HERITAGE & HISTORIC CRITERIA	
Historic assets	Historic landscape character including the presence and influence of nationally designated or locally significant heritage assets on the landscape, for example Listed Buildings, Registered Parks and Gardens, historic field systems and features such as ridge and furrow, field ponds and unimproved land (but not buried archaeology).
Recreation	Evidence of recreational uses where landscape is important to its enjoyment, such as public rights of way (including long-distance routes), outdoor visitor facilities, and landscape-based tourist attractions.
BUILT DEVELOPMENT & SETTLEMENT PATTERN CRITERIA	
Built development	The relative presence or absence of built development in the landscape, or in adjacent landscapes where they affect character, including industrial or commercial buildings and infrastructure, transport routes and power lines, brownfield land, and vertical structures such as communications masts, pylons and chimneys.
Settlement	The pattern, scale and relative density of settlement, from unsettled or small scale, low density, strongly rural dispersed pattern of scattered villages, farms and cottages, to large scale, high density urban areas on the edge of an LCA where 20th century residential development has a significant effect on its character.
PERCEPTUAL & VISUAL CRITERIA	
Skylines	Visual horizons can be simple i.e. relatively flat and featureless and not prominent, or more prominent and distinctive and/or complex with woodland, trees and other features. Undeveloped skylines are more sensitive than skylines where development is prominent, even if located in adjacent character areas.
Views and landmarks	Can include views from popular viewpoints, or views to landmark cultural buildings such as churches, and natural features such as ridges and hills, either within the same character area or beyond.
Intervisibility	Depending largely on enclosure, landscapes may be visible across a wide area, or may be secluded and difficult to see from beyond the area.
Visual receptors	The presence of visual receptors is indicated by settlement and by the popularity of areas used for recreational purposes, including public rights of way and the network of roads, canals and other transport corridors with large numbers of potential receptors.
QUALITATIVE CRITERIA	
Scenic quality	The natural beauty and scenic quality of the landscape, which may or not be recognised by landscape designation, for example Area of Special County Value (ASCV).
Distinctiveness	The extent to which a landscape is representative of the Cheshire West and Chester landscape, or contributes to a local sense of place.
Rarity	The relative frequency of a landscape's general type, within Cheshire West and Chester.

5.9 The same five-point scale is used against which each landscape character area is assessed in terms of sensitivity to solar PV energy as used to assess wind energy development. The five-point scale represents a gradual continuum (rather than a rigid scale with fixed points) from *low, low-moderate, moderate, moderate-high* and *high*, using the 2016 Landscape Strategy, fieldwork and professional judgement to decide the placement on the scale, and overall sensitivity.

5.10 Completed matrices for all 53 LCAs are provided within a separate **Supporting Technical Appendix** to this main report.

5.11 **Table 5** summarises the sensitivity of each LCA. This is also reproduced in the Supporting Technical Appendix on Sensitivity to Solar PV Development.

5.12 As described in paragraph 3.11, overall sensitivity (using the same five-point scale) of each landscape character type to the different sizes of solar arrays considered in the assessment is decided upon, using professional judgement. The assessment made is summarised in tables and discussed in terms of overall landscape character type sensitivity, referring to specific character area sensitivity where applicable and sensitivity to the different solar arrays considered in the assessment.

5.13 The landscape sensitivity assessments for each of the sixteen landscape character types (LCT) are given after Table 5. The assessments for each LCT follow the following format:

- A map illustrates the general location of the landscape character type and each landscape character area within the type;
- A summary table indicates key sensitivities of the LCT to key characteristics, recorded under the five headings from the 2016 Landscape Strategy;
- A table provides the sensitivity assessment for each landscape character area within the LCT together with the overall LCT assessment rating for each of the different sizes of solar farm considered in the study;
- A table provides analysis of the LCT sensitivity with reference to landscape character areas and the different sizes of solar farms considered in the study.

Table 5: Summary of Sensitivity of Landscape Character Areas to Solar Photovoltaic Development

Landscape Character Types and Landscape Character Areas within the Landscape Strategy 2016	Landscape Sensitivity Criteria															OVERALL ASSESSMENT
	Natural & Physical				Cultural, Heritage & Historic		Built Development & Settlement Pattern		Perceptual & Visual				Qualitative			
	Landform	Land cover	Field pattern scale & landscape features	Enclosure	Historic assets	Recreation	Built development	Settlement	Skylines	Views & landmarks	Intervisibility	Visual receptors	Scenic quality	Distinctiveness	Rarity	
LCT 1: Woodland, Heaths, Meres and Mosses																
LCA 1a: Delamere	M	H	M-H	L-M	M	M-H	M-H	M-H	L-M	L-M	L-M	M	M-H	M-H	M-H	**M-H**
LCA 1b: Allostock	L	H	M	M	L	M	L-M	H	L-M	L-M	L-M	M	M	M	M-H	**M**
LCA 1c: Bickley	L-M	M	M-H	L-M	L	M	M-H	H	M	L-M	M	M	M	M-H	M-H	**M-H**
LCT 2: Sandstone Ridge																
LCA 2a: Frodsham	H	M-H	M	M-H	M-H	M-H	L-M	H	H	H	H	M-H	H	H	M-H	**H**
LCA 2b: Helsby Hill	H	M-H	M	M-H	H	M-H	H	H	H	H	H	H	H	H	M-H	**H**
LCA 2c: Eddisbury	H	M-H	M-H	M-H	H	M-H	L-M	H	H	H	H	H	H	H	M-H	**H**
LCA 2d: Beeston Crag	H	M	M	M-H	H	H	H	H	H	H	H	M-H	H	H	H	**H**
LCA 2e: Higher Burwardsley	H	M-H	M	M-H	M	M-H	M-H	H	H	H	H	M-L	H	H	M-H	**H**
LCA 2f: Larkton Hill/Hether Wood	H	M	M	M	M-H	M-H	H	H	H	H	H	M-H	H	H	M-H	**H**
LCT 3: Sandstone Fringe																
LCA 3a: Helsby to Tarporley	M	M	M-H	M	M	M	L-M	M-H	M	M-H	M-H	M	M-H	M-H	M	**M-H**

Landscape Character Types and Landscape Character Areas within the Landscape Strategy 2016	Landscape Sensitivity Criteria															OVERALL ASSESSMENT
	Natural & Physical				Cultural, Heritage & Historic		Built Development & Settlement Pattern		Perceptual & Visual				Qualitative			
	Landform	Land cover	Field pattern scale & landscape features	Enclosure	Historic assets	Recreation	Built development	Settlement	Skylines	Views & landmarks	Intervisibility	Visual receptors	Scenic quality	Distinctiveness	Rarity	
LCA 3b: Beeston to Duckington	M-H	M-H	M-H	M-H	M-H	M	M-H	M-H	M	M-H	M-H	M	M-H	M-H	M	**M-H**
LCT 4: Drained Marsh																
LCA 4a: Frodsham, Helsby and Lordship Marshes	L	L-M	L-M	H	L-M	M	L-M	H	L-M	M-H	M	M-H	L	M-H	M-H	**M-H**
LCA 4b: The Lache Eyes	L	L	L-M	H	L	L-M	L-M	H	L-M	M	M	L	L-M	M	M-H	**M**
LCA 4c: Dodleston Drained Marsh	L	L	L-M	H	L	L	H	H	L-M	M	M	L	L-M	M	M-H	**M**
LCA 4d: Burton & Shotwick Drained Marsh	L	M	L-M	H	L	M-H	L-M	H	L-M	M	L-M	L-M	L-M	M	M-H	**L-M**
LCT 5: Undulating Enclosed Farmland																
LCA 5a: Norley	M-H	M-H	M-H	L-M	L-M	M	M-H	M-H	L-M	M	M	L-M	M-H	M	M	**M-H**
LCA 5b: Frodsham to Northwich	L-M	L-M	M-H	M	L-M	M	L-M	M-H	L-M	M-H	M	M	M	M	M	**M**
LCA 5c: Eaton, Marton & Over	M	L-M	M-H	M	M-H	M	M	M-H	L-M	M	M	M	M	M	M	**M**

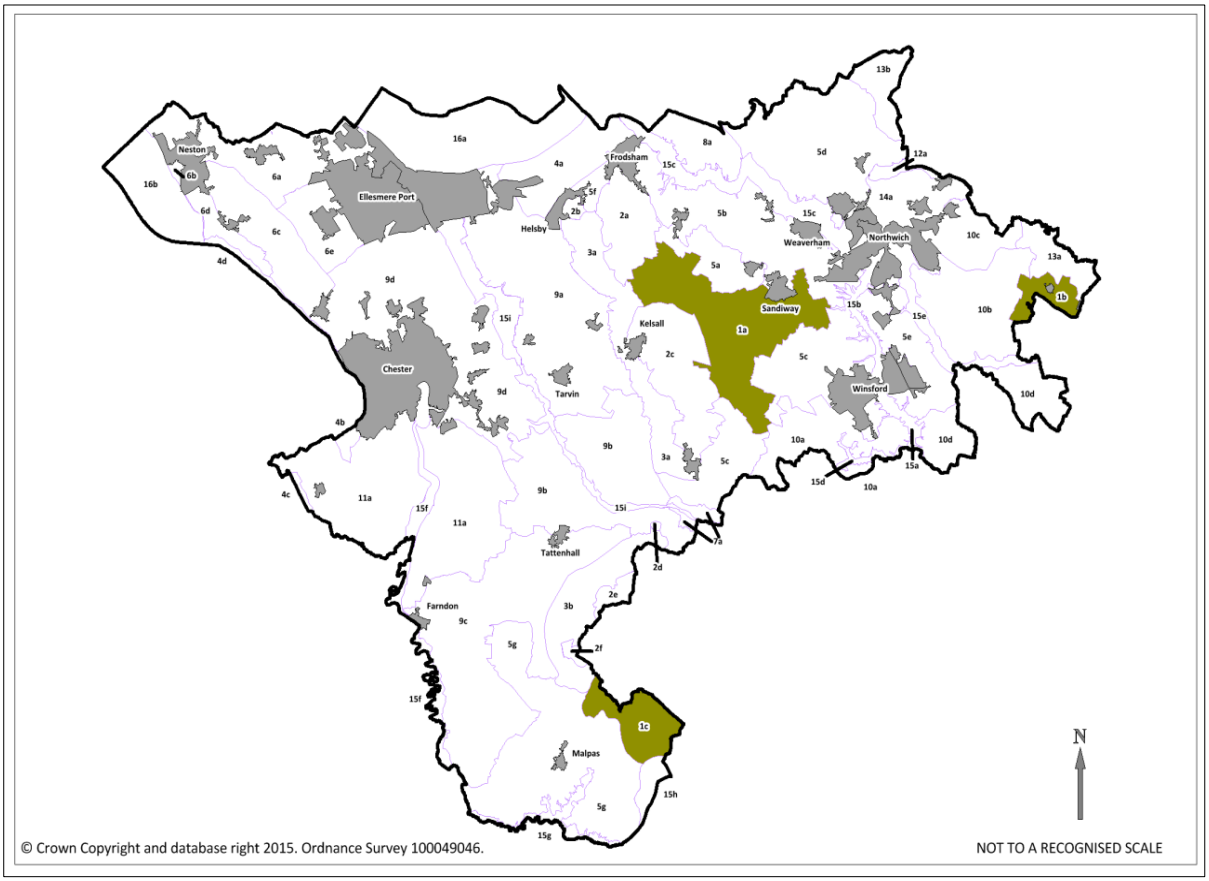
Landscape Character Types and Landscape Character Areas within the Landscape Strategy 2016	Landscape Sensitivity Criteria															OVERALL ASSESSMENT
	Natural & Physical				Cultural, Heritage & Historic		Built Development & Settlement Pattern		Perceptual & Visual				Qualitative			
	Landform	Land cover	Field pattern scale & landscape features	Enclosure	Historic assets	Recreation	Built development	Settlement	Skylines	Views & landmarks	Intervisibility	Visual receptors	Scenic quality	Distinctiveness	Rarity	
LCA 5d: Whitley and Comberbach	L-M	L-M	M-H	M	M	M	L-M	M-H	L-M	L-M	L-M	M	M	M	M	**M**
LCA 5e: East Winsford	L-M	L-M	M-H	M	M-H	L-M	L-M	M	L-M	L-M	L-M	M	L-M	M	M	**M**
LCA 5f: Helsby to Frodsham	M	M	M-H	M	L	M	L-M	M-H	M-H	H	M-H	M-H	M-H	M	M	**M-H**
LCA 5g: Malpas	M	M-H	M-H	M-H	H	M-H	M-H	M	M	M-H	M-H	M-H	M-H	M	M	**M-H**
LCT 6: Enclosed Farmland																
LCA 6a: Willaston	L-M	L-M	M-H	M	L-M	M	L	M	L-M	M-H	L-M	M-H	M-H	M	M	**M**
LCA 6b: Neston	L	L-M	M-H	L-M	L	M	M-H	H	M	M-H	M	M-H	M	L-M	M	**M-H**
LCA 6c: Neston to Saughall	L-M	L-M	M-H	M	L-M	L-M	L-M	M-H	L-M	M-H	M	M	M-H	M	M	**M**
LCA 6d: Ness, Burton, Puddington & Shotwick Slopes	L-M	L-M	M	M-H	M	M	L-M	H	M	M-H	M	L-M	M-H	L-M	M	**M**
LCA 6e: Capenhurst Plateau	L	L-M	M	L-M	L-M	L-M	L	M	L-M	L	L	M-H	L-M	L-M	L-M	**L-M**
LCT 7: Rolling Farmland																
LCA 7a: Tiverton &	H	L-M	M	M	M-H	M	M	M-H	M-H	M-H	M	M	M-H	M	H	**M-H**

Landscape Character Types and Landscape Character Areas within the Landscape Strategy 2016	Landscape Sensitivity Criteria															OVERALL ASSESSMENT
	Natural & Physical				Cultural, Heritage & Historic		Built Development & Settlement Pattern		Perceptual & Visual				Qualitative			
	Landform	Land cover	Field pattern scale & landscape features	Enclosure	Historic assets	Recreation	Built development	Settlement	Skylines	Views & landmarks	Intervisibility	Visual receptors	Scenic quality	Distinctiveness	Rarity	
Tilston																
LCT 8: Heathy Farmland and Woodland																
LCA 8a: Aston	L-M	L-M	M	M-H	M	L-M	L-M	H	M-H	M-H	M-H	M	M-H	M	H	**M-H**
LCT 9: Cheshire Plain West																
LCA 9a: Dunham to Tarvin Plain	L-M	L-M	M-H	M-H	L-M	M	L-M	M	M	M-H	M-H	M-H	M	M-H	L	**M-H**
LCA 9b: Hargrave, Hoofield & Beeston Plain	L-M	L	M-H	M-H	M	M	M-H	H	M-H	H	M	L-M	M	M-H	L	**M-H**
LCA 9c: Tattenhall to Shocklach Plain	L-M	L	M-H	M-H	M-H	M	M-H	H	M-H	H	M-H	M	M	M-H	L	**M-H**
LCA 9d: Saughall to Waverton Plain	M	M-H	M	M-H	M-H	M	L-M	M	L-M	M	M	H	L-M	M	L-M	**M**
LCT 10: Cheshire Plain East																
LCA 10a: Darnhall Plain	L	L	M-H	M-H	L-M	L	H	H	L	M-H	M-H	L	M	M-H	L	**M**
LCA 10b: Stublach Plain	L	M	M-H	M-H	L-M	L-M	L-M	H	L-M	M	L-M	M	M	H	M-H	**L-M**
LCA 10c: Lostock Plain	L	M	M-H	H	L-M	L-M	L-M	M-H	L-M	M	L-M	M	M	H	M-H	**M**

Landscape Character Types and Landscape Character Areas within the Landscape Strategy 2016	Landscape Sensitivity Criteria															OVERALL ASSESSMENT
	Natural & Physical				Cultural, Heritage & Historic		Built Development & Settlement Pattern		Perceptual & Visual				Qualitative			
	Landform	Land cover	Field pattern scale & landscape features	Enclosure	Historic assets	Recreation	Built development	Settlement	Skylines	Views & landmarks	Intervisibility	Visual receptors	Scenic quality	Distinctiveness	Rarity	
LCA 10d: Wimboldsley and Sproston Plain	L	L	M-H	H	L-M	L-M	L-M	M-H	L-M	L-M	L-M	M	M	M-H	L	**L-M**
LCT 11: Estate Farmland																
LCA 11a: Grosvenor Estate	L-M	M	M-H	L-M	H	L-M	M	M-H	M	M-H	M	M	H	H	H	**M-H**
LCT 12: Mere Basin																
LCA 12a: Budworth Mere	H	H	M	L	L	M-H	H	H	M	M	M	M	M	H	M-H	**M-H**
LCT 13: Lowland Farmland and Mosses																
LCA 13a: Peover	L-M	L-M	M-H	L-M	L	L	M	M-H	L-M	M	L-M	M	M	M	L-M	**L-M**
LCA 13b: Arley West	L-M	L-M	M-H	M	L	L-M	H	H	L-M	M	L-M	L	M	M	M-H	**L-M**
LCT 14: Salt Heritage Landscape																
LCA 14a: Northwich	H	H	L-M	M	L-M	M-H	L	L-M	L-M	M-H	L-M	M-H	L-M	H	H	**L-M**
LCT 15: River Valleys																
LCA 15a: Upper Weaver Valley	H	H	M	L	L-M	M	H	H	M-H	L	L	L-M	H	M-H	M	**H**
LCA 15b: Mid Weaver Valley	H	H	M	L	M	M-H	L-M	M-H	M-H	M	L	L-M	H	M-H	M	**H**

Landscape Character Types and Landscape Character Areas within the Landscape Strategy 2016	Landscape Sensitivity Criteria															OVERALL ASSESSMENT
	Natural & Physical				Cultural, Heritage & Historic		Built Development & Settlement Pattern		Perceptual & Visual				Qualitative			
	Landform	Land cover	Field pattern scale & landscape features	Enclosure	Historic assets	Recreation	Built development	Settlement	Skylines	Views & landmarks	Intervisibility	Visual receptors	Scenic quality	Distinctiveness	Rarity	
LCA 15c: Lower Weaver Valley	H	H	M	L-M	M	M-H	L-M	H	M-H	M	L	M	H	M-H	M	**H**
LCA 15d: Ash Brook Valley	H	H	M	L	L-M	L	H	H	M-H	L-M	L	L	M-H	M-H	M	**H**
LCA 15e: Dane Valley	H	H	M	L-M	M	M	M-H	M-H	M	M	L-M	M	M-H	M-H	M	**M-H**
LCA 15f: Dee Valley	M	H	M	L	M-H	M	M-H	M-H	M-H	M	L-M	M	M-H	M-H	M	**M-H**
LCA 15g: Wych Valley	H	H	M	L	L-M	L-M	H	H	M-H	L	L	L	H	M-H	M	**H**
LCA 15h: Grindley Valley	L-M	M	M-H	M	L-M	M	H	H	M	L-M	L-M	M	M-H	M-H	M	**M**
LCA 15i: Gowy Valley	L-M	M	L-M	M-H	M	L-M	L-M	H	M	L	L-M	M	M	M	M	**M**
LCT 16: Mudflats & Saltmarsh																
LCA 16a: Stanlow & Ince Banks	L	L	L	H	L	L	L	H	L	M-H	H	L	M-H	M-H	M-H	**H**
LCA 16b: Dee Estuary	L	L	L	H	L-M	L-M	L-M	H	L	H	H	M-H	M-H	M-H	M-H	**H**

SENSITIVITY TO SOLAR PV DEVELOPMENT
LCT 1: WOODLANDS, HEATHS, MERES & MOSSES



There are 3 Landscape Character Areas within LCT 1:
LCA 1a: *Delamere*; LCA 1b: *Allostock*; LCA 1c: *Bickley*

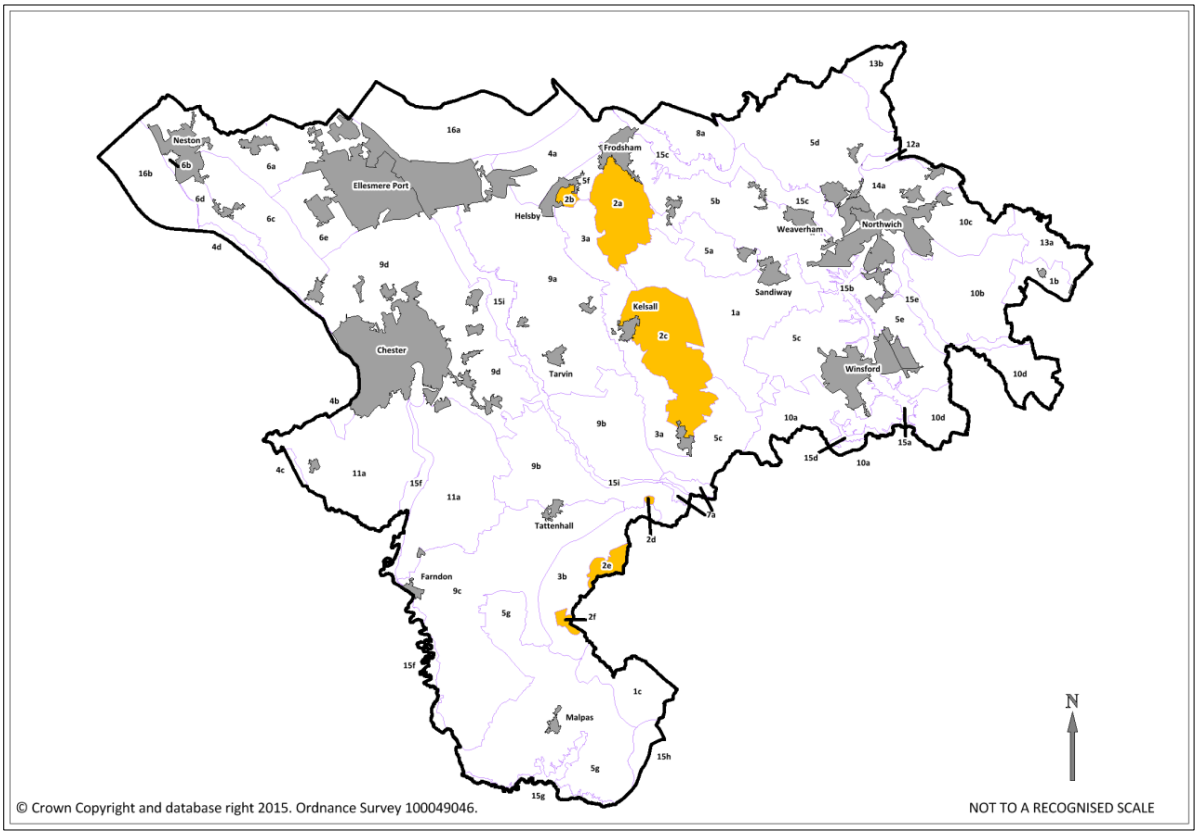
LCT 1 SENSITIVITY OF KEY CHARACTERISTICS TO SOLAR PV DEVELOPMENT	
Sensitivity Attributes	**Summary of Sensitivity**
Natural & Physical	• The enclosed, gently undulating, uniform landscape could potentially support solar PV development in principle; • The medium to small scale field pattern, frequent landscape features, variety in land cover, and mosaic of landscape features are sensitive characteristics.
Cultural, Heritage & Historic	• Historic assets are generally of local significance although impact on setting should be carefully considered; • LCA 1a: *Delamere* is highly sensitive being particularly important for recreation.
Built Development & Settlement Pattern	• Limited built development and man-made structures, and the mostly small scale, low density, dispersed settlement pattern are highly sensitive to solar PV development that would be out of scale and increase the perception of human influence.
Perceptual & Visual	• Skylines are not prominent, with limited views and intervisibility, although views from the sandstone ridge are sensitive and visual receptors have moderate sensitivity;

LCT 1 SENSITIVITY OF KEY CHARACTERISTICS TO SOLAR PV DEVELOPMENT	
Sensitivity Attributes	**Summary of Sensitivity**
Qualitative	• Relatively high scenic quality, rarity and distinctiveness of the landscape increases sensitivity to the principle of solar PV development.

LCT 1 SOLAR PV SENSITIVITY ASSESSMENT							
LCA SENSITIVITY			**LCT 1 SENSITIVITY**				
LCA	**Sensitivity**		**Very Small Solar Farm <1ha [<2.5acres]**	**Small Solar Farm 1-6ha [2.5-15 acres]**	**Medium Solar Farm 6-15ha [15-37 acres]**	**Large Solar Farm 15-25ha [37-63 acres]**	**Very Large Solar Farm >25ha [>63acres]**
1a	M-H		M	M-H	H	H	H
1b	M						
1c	M-H						

LCT 1 SOLAR PV SENSITIVITY ANALYSIS
• LCT 1 is particularly sensitive to a medium, large or very large solar farm that would be out of scale with the medium to small scale field pattern, that may involve the removal of traditional landscape features and that may bring a perception of human influence in a landscape with limited built development and man-made structures and perceived naturalness; • The greatest potential for solar PV development within LCT 1 is for a very small solar farm, and potentially a solar array at the smaller end of the 'small solar farm' category, where existing boundary features are retained to help screen the development; • Any small scale solar PV development should conserve the mosaic of habitats in accordance with the landscape management strategy in the 2016 Landscape Strategy; • Any small scale solar PV development should consider mitigation opportunities to increase woodland cover and the replanting of hedgerows and trees in areas of enclosed farmland to maintain a continuous hedgerow network in accordance with the landscape management strategy in the 2016 Landscape Strategy, and to help screen the development; • Any small scale solar PV development should avoid creating adverse visual impact to sensitive views, in particular views from higher ground on the sandstone ridge and open views across the meres.

SENSITIVITY TO SOLAR PV DEVELOPMENT
LCT 2: SANDSTONE RIDGE



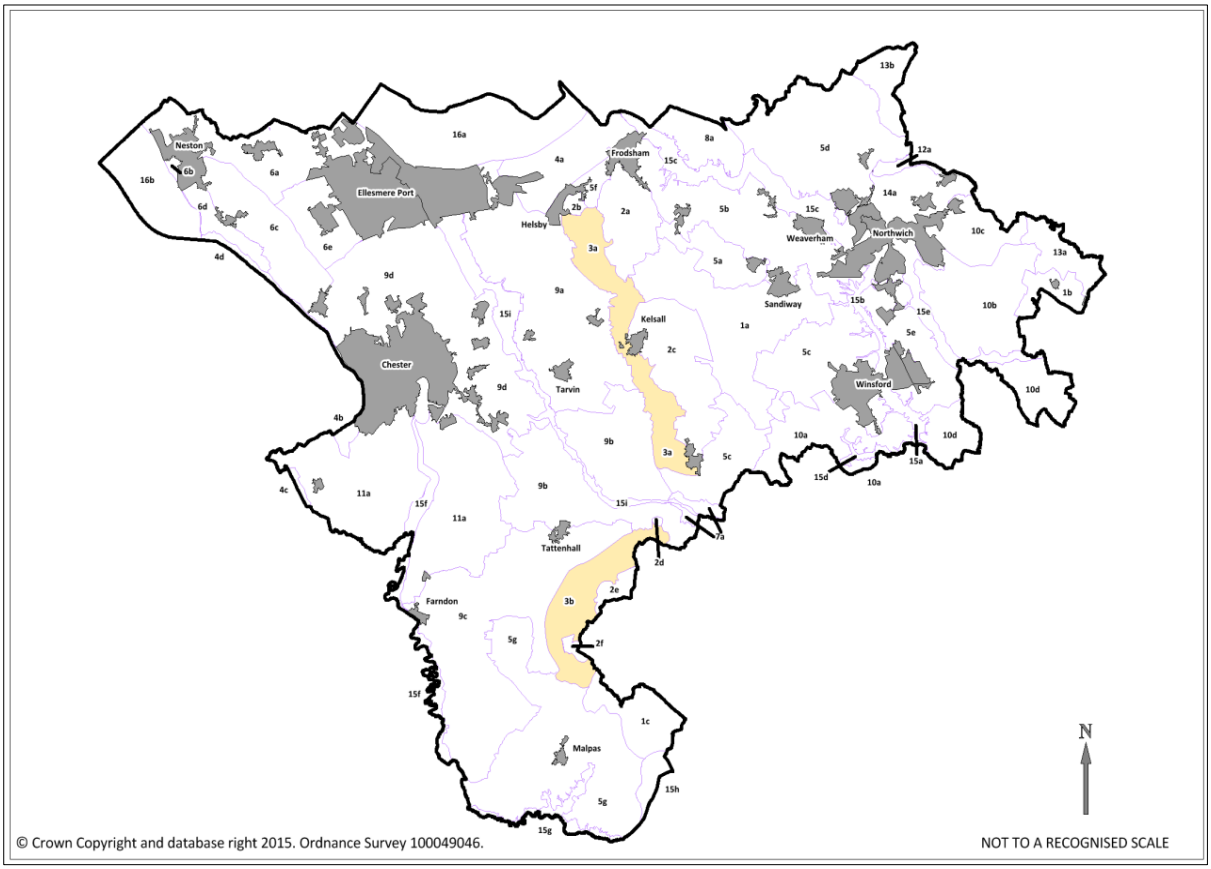
There are 6 Landscape Character Areas within LCT 2:
LCA 2a: *Frodsham*; LCA 2b: *Helsby Hill*; LCA 2c: *Eddisbury*; LCA 2d: *Beeston Crag*; LCA 2e: *Higher Burwardsley*; LCA 2f: *Larkton Hill/Hether Wood*

LCT 2 SENSITIVITY OF KEY CHARACTERISTICS TO SOLAR PV DEVELOPMENT	
Sensitivity Attributes	**Summary of Sensitivity**
Natural & Physical	• The strong topographical landform, varied land cover, and generally open character of the sandstone ridge make it particularly sensitive to solar PV development in principle.
Cultural, Heritage & Historic	• The presence of significant historic assets throughout the landscape, including iconic hill forts and castles, make this LCT particularly sensitive to solar PV development in principle that may adversely affect setting; • The ridge provides an important recreational resource with rights of way including long distance footpaths.
Built Development & Settlement Pattern	• Limited built development and modern man-made structures, and the mostly unsettled, small scale, low density, dispersed settlement pattern is highly sensitive to solar development.
Perceptual & Visual	• The distinctive sandstone ridge is visually prominent, with key views from sensitive visual receptors, and extensive intervisibility.
Qualitative	• High scenic quality, rarity and distinctiveness of the landscape create high sensitivity to the principle of solar PV development.

LCT 2 SOLAR PV SENSITIVITY ASSESSMENT							
LCA SENSITIVITY			LCT 2 SENSITIVITY				
LCA	Sensitivity		Very Small Solar Farm <1ha [<2.5acres]	Small Solar Farm 1-6ha [2.5-15 acres]	Medium Solar Farm 6-15ha [15-37 acres]	Large Solar Farm 15-25ha [37-63 acres]	Very Large Solar Farm >25ha [>63acres]
2a	H		M-H	H	H	H	H
2b	H						
2c	H						
2d	H						
2e	H						
2f	H						

LCT 2 SOLAR PV SENSITIVITY ANALYSIS
• LCT 2 is sensitive to any form of solar farm development. Even a very small solar farm is likely to adversely affect key views from highly sensitive visual receptors on the prominent ridge with extensive visibility; • Furthermore, the sandstone ridge is of high scenic quality, rarity and distinctiveness and thus highly sensitivity to the principle of solar PV development.

SENSITIVITY TO SOLAR PV DEVELOPMENT
LCT 3: SANDSTONE FRINGE



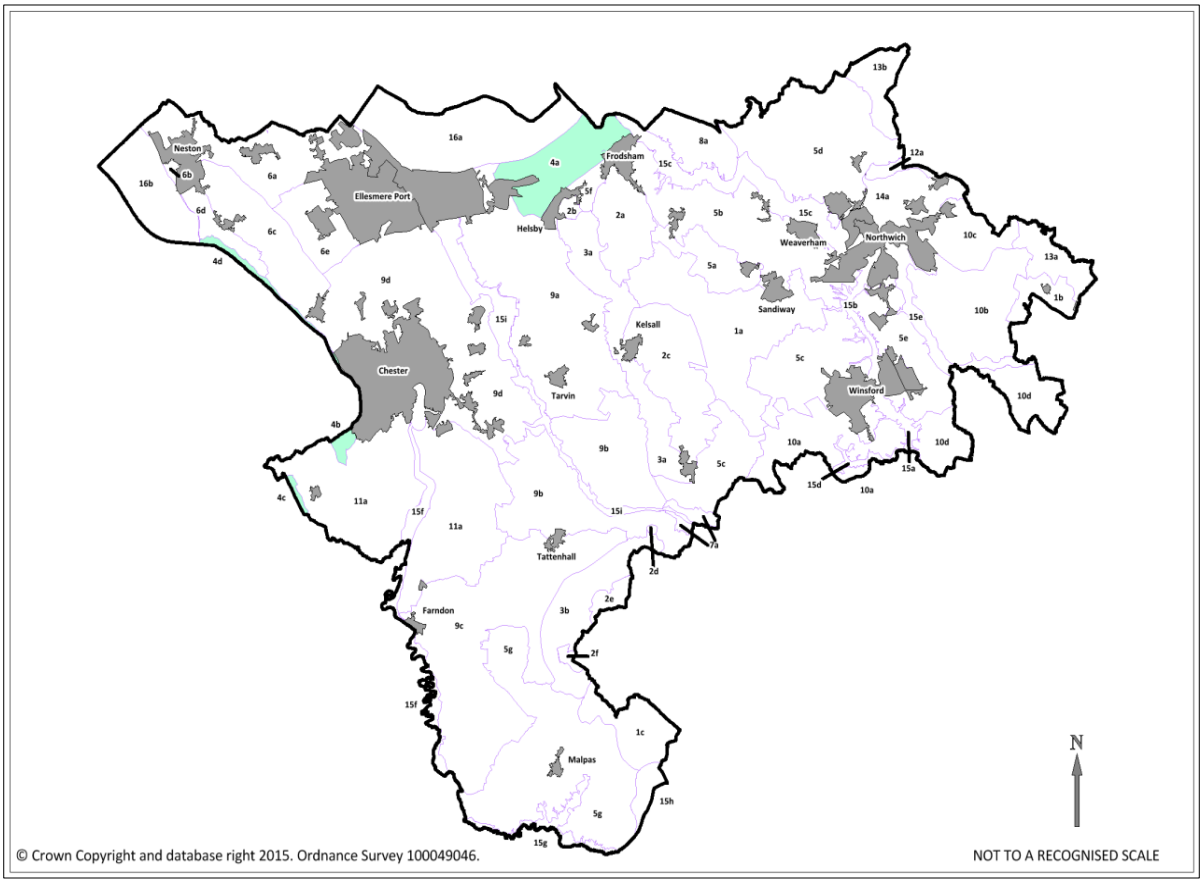
There are 2 Landscape Character Areas within LCT 3:
LCA 3a: *Helsby to Tarporley*; LCA 3b: *Beeston to Duckington*

LCT 3 SENSITIVITY OF KEY CHARACTERISTICS TO SOLAR PV DEVELOPMENT	
Sensitivity Attributes	**Summary of Sensitivity**
Natural & Physical	• The open sloping or undulating landform and transitional landscape with a medium to small scale field pattern and frequent landscape features is of moderate to high sensitivity to solar PV development in principle.
Cultural, Heritage & Historic	• Some historic assets are of significance where impact on setting should be carefully considered; • Rights of way including long distance footpaths provide a recreational resource.
Built Development & Settlement Pattern	• Limited built development and man-made structures and the mostly small to medium scale and density settlement pattern are sensitive to solar PV development that would be out of scale and increase the perception of human influence.
Perceptual & Visual	• Skylines are of some prominence though not as distinctive as the neighbouring ridge, with key views and strong links to neighbouring landscapes, and visual receptors have moderate sensitivity.
Qualitative	• Relatively high scenic quality and distinctiveness of the landscape, with some parts designated ASCV, increases sensitivity to the principle of solar PV development.

LCT 3 SOLAR PV SENSITIVITY ASSESSMENT							
LCA SENSITIVITY			LCT 3 SENSITIVITY				
LCA	Sensitivity		Very Small Solar Farm <1ha [<2.5acres]	Small Solar Farm 1-6ha [2.5-15 acres]	Medium Solar Farm 6-15ha [15-37 acres]	Large Solar Farm 15-25ha [37-63 acres]	Very Large Solar Farm >25ha [>63acres]
3a	M-H		M-H	M-H	H	H	H
3b	M-H						

LCT 3 SOLAR PV SENSITIVITY ANALYSIS
• LCT 3 is particularly sensitive to a medium, large or very large solar farm that would be out of scale with the medium to small scale field pattern, that may involve the removal of traditional landscape features and that may bring a perception of human influence in a landscape with limited built development and man-made structures and perceived naturalness; • Even a very small or small solar farm is likely to create significant adverse impact on the open undulating transitional sandstone fringe; • The greatest potential for solar PV development within LCT 3 is for a very small solar farm where existing landform undulations and boundary features are retained to help screen the development; • However, even a small scale solar PV development is likely to be contrary to the landscape management strategy in the 2016 Landscape Strategy which is to conserve and enhance the pastoral character of the sandstone fringe, its strong ancient field pattern and views to and from the *Sandstone Ridge* and the *Cheshire Plain West*. ; • Any small scale solar PV development should consider mitigation opportunities to increase woodland cover in accordance with the landscape management strategy in the 2016 Landscape Strategy, and to help screen the development; • Any small scale solar PV development should avoid creating adverse visual impact to sensitive views, in particular views from higher ground on the sandstone ridge; • Any solar farm should avoid the highest quality land within the ASCV.

SENSITIVITY TO SOLAR PV DEVELOPMENT
LCT 4: DRAINED MARSH



There are 4 Landscape Character Areas within LCT 4:
LCA 4a: *Frodsham, Helsby and Lordship Marshes*; LCA 4b: *The Lache Eyes*; LCA 4c: *Dodleston Drained Marsh*; LCA 4d: *Burton & Shotwick Drained Marsh*

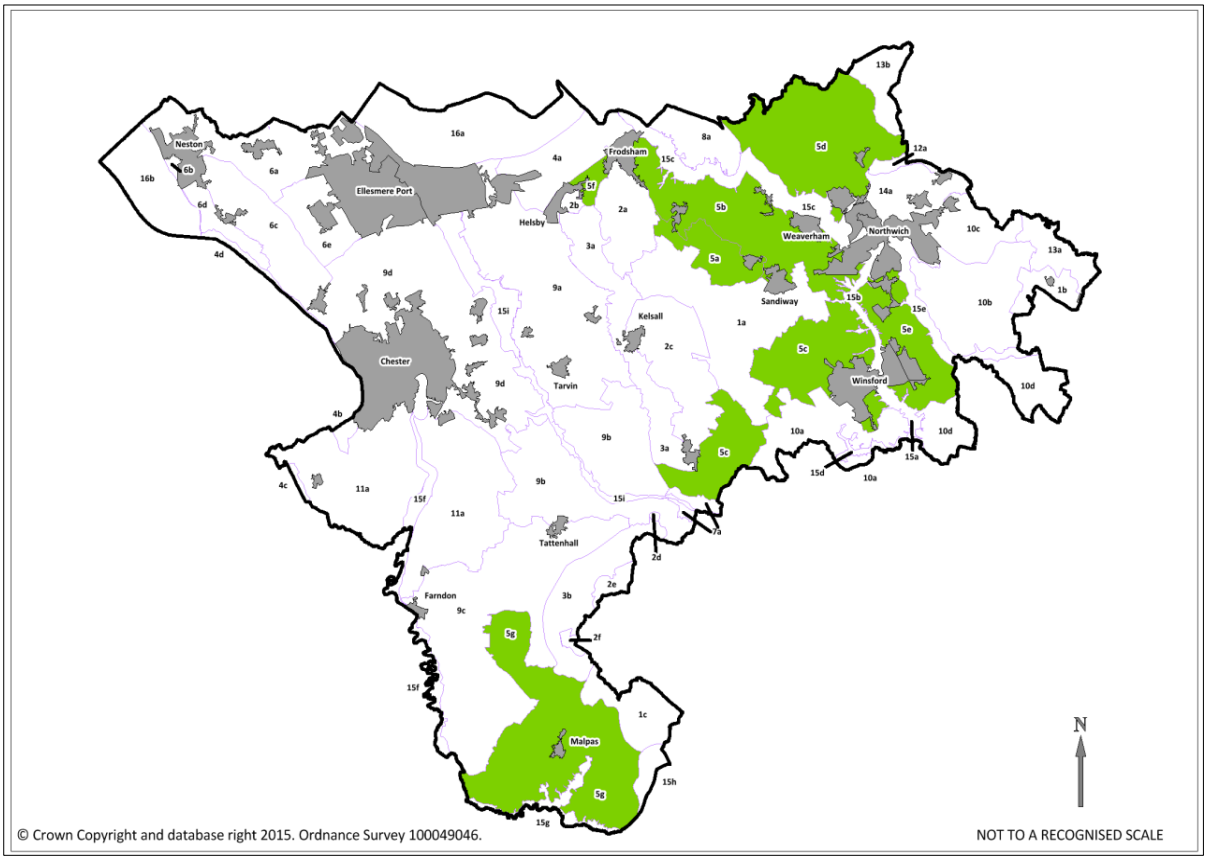
LCT 4 SENSITIVITY OF KEY CHARACTERISTICS TO SOLAR PV DEVELOPMENT	
Sensitivity Attributes	**Summary of Sensitivity**
Natural & Physical	• The open, exposed landscape of the drained marsh is highly sensitive to solar PV development in principle; • However, the simple uniformity of landform and land cover, and its medium to large scale pattern with only occasional landscape features means there is some potential for solar PV development.
Cultural, Heritage & Historic	• There are few significant historic assets with generally low sensitivity; • Generally a low level of recreational use although LCA 4d: *Burton & Shotwick Drained Marsh* is more sensitive with recreational fishing ponds and visitors to the RSPB Burton Mere wetlands reserve.
Built Development & Settlement Pattern	• The influence of built development within adjacent landscapes reduces the perception of naturalness and reduces sensitivity; • The mostly small scale, low density, dispersed settlement pattern is highly sensitive to solar PV development that would be out of scale and further increase the perception of human influence.

LCT 4 SENSITIVITY OF KEY CHARACTERISTICS TO SOLAR PV DEVELOPMENT	
Sensitivity Attributes	**Summary of Sensitivity**
Perceptual & Visual	• Skylines are not prominent, with generally only locally significant views, limited intervisibility and visual receptors reducing sensitivity. However there are sensitive views down to LCA 4a: *Frodsham, Helsby and Lordship Marshes* from important viewpoints on the sandstone ridge.
Qualitative	• Low to medium scenic quality with some distinctiveness reduces sensitivity, but the drained marsh is a less common landscape in CWaC the character of which could be adversely affected by solar PV development.

LCT 4 SOLAR PV SENSITIVITY ASSESSMENT							
LCA SENSITIVITY			**LCT 4 SENSITIVITY**				
LCA	**Sensitivity**		**Very Small Solar Farm <1ha [<2.5acres]**	**Small Solar Farm 1-6ha [2.5-15 acres]**	**Medium Solar Farm 6-15ha [15-37 acres]**	**Large Solar Farm 15-25ha [37-63 acres]**	**Very Large Solar Farm >25ha [>63acres]**
4a	M-H		L-M	L-M	M	M-H	H
4b	M						
4c	M						
4d	L-M						

LCT 4 SOLAR PV SENSITIVITY ANALYSIS
• LCT 4 is particularly sensitive to a medium, large or very large solar farm that would be overly dominant within the relatively small LCAs within this LCT; • A medium, large or very large solar farm could potentially fit into the largest LCA 4a: *Frodsham, Helsby and Lordship Marshes* but being south-facing it would impact on important viewpoints from *Frodsham Sandstone Ridge* and *Helsby Hill* northwards over the Mersey estuary. • The greatest potential for solar PV development within LCT 4 is for a very small solar farm, and potentially a solar array at the smaller end of the 'small solar farm' category, where sensitive views are limited and where there is some existing field pattern that could be retained, such as in LCA 4d: *Burton & Shotwick Drained Marsh*; • Any small scale solar PV development in LCA 4d should consider mitigation opportunities to restore hedgerows in accordance with the landscape management strategy in the 2016 Landscape Strategy, and to help screen the development if its essentially open character is also conserved; • Even a small scale solar PV development would be contrary to the landscape management strategy in the 2016 Landscape Strategy which is to conserve the open, undeveloped character of the drained marshland within LCAs 4a, 4b & 4c.

SENSITIVITY TO SOLAR PV DEVELOPMENT
LCT 5: UNDULATING ENCLOSED FARMLAND



There are 7 Landscape Character Areas within LCT 5:
LCA 5a: *Norley*; LCA 5b: *Frodsham to Northwich*; LCA 5c: *Eaton, Marton & Over*;
LCA 5d: *Whitley and Comberbach*; LCA 5e: *East Winsford*; LCA 5f: *Helsby to Frodsham*;
LCA 5g: *Malpas*

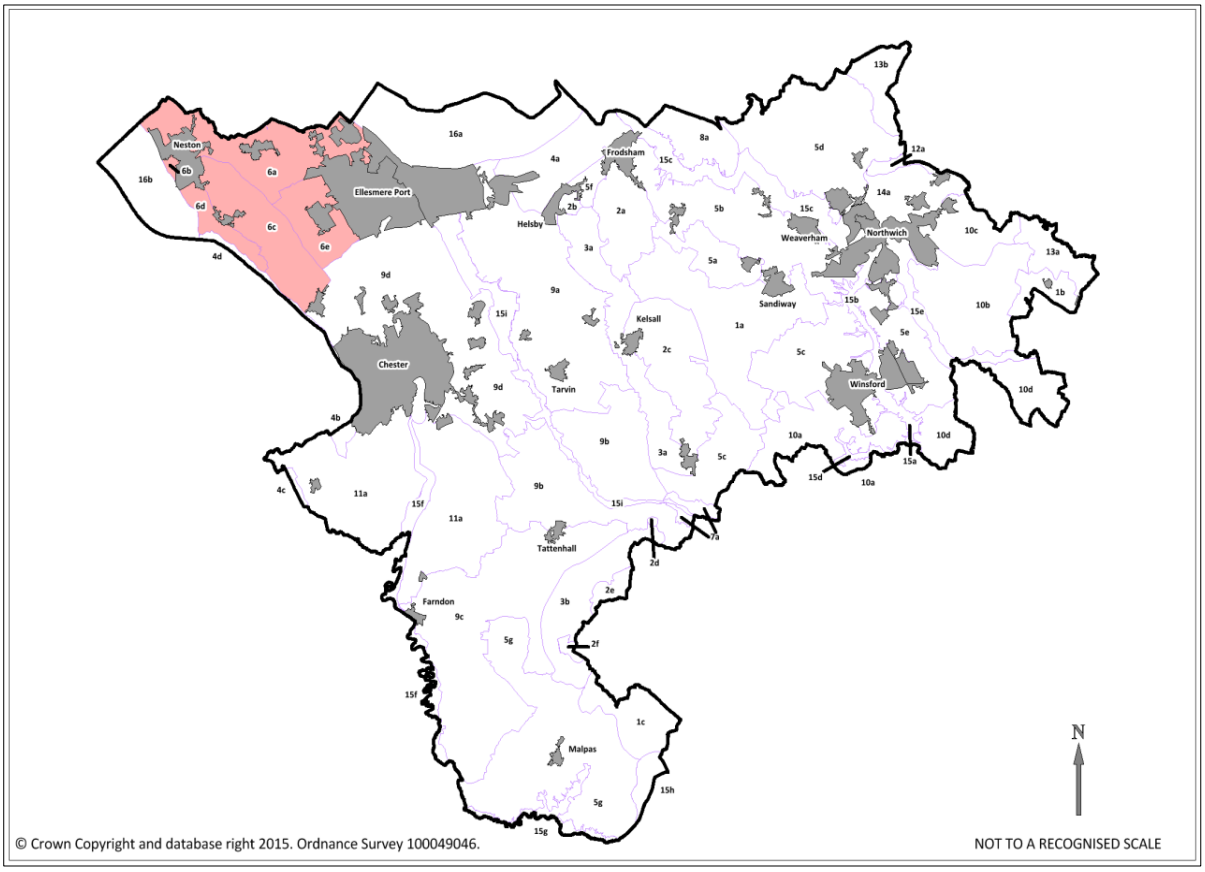
LCT 5 SENSITIVITY OF KEY CHARACTERISTICS TO SOLAR PV DEVELOPMENT	
Sensitivity Attributes	**Summary of Sensitivity**
Natural & Physical	• The medium to small scale field pattern, presence of human scale features in the landscape, and undulating nature of the landscape make it sensitive to solar PV development in principle; • Where landform is more uniform, with simple land cover and some enclosure, sensitivity is reduced.
Cultural, Heritage & Historic	• There are locally significant historic assets where impact on setting should be carefully considered; historic character of LCA 5g: *Malpas* makes it of high sensitivity to modern influences; • Generally a low level of recreational use although parts of LCA 5g: *Malpas* are more sensitive around the Carden Park Estate.
Built Development & Settlement Pattern	• The influence of built development and modern man-made structures, and the mostly unsettled, small scale, low density, dispersed settlement pattern is sensitive to solar PV development that would increase the perception of human influence.

LCT 5 SENSITIVITY OF KEY CHARACTERISTICS TO SOLAR PV DEVELOPMENT	
Sensitivity Attributes	**Summary of Sensitivity**
Perceptual & Visual	• Skylines are generally not prominent, with locally significant views, limited intervisibility and visual receptors reducing sensitivity; however LCA 5f: *Helsby to Frodsham* is the exception due to its importance to the setting of the sandstone ridge increasing sensitivity to small, medium and large scale solar PV development;
Qualitative	• Pleasant scenic quality and some distinctiveness with overall moderate sensitivity; • The LCT is a more common landscape in CWaC with some distinctive features.

LCT 5 SOLAR PV SENSITIVITY ASSESSMENT						
LCA SENSITIVITY			**LCT 5 SENSITIVITY**			
LCA	**Sensitivity**		**Very Small Solar Farm <1ha [<2.5acres]**	**Small Solar Farm 1-6ha [2.5-15 acres]**	**Medium Solar Farm 6-15ha [15-37 acres]**	**Large Solar Farm 15-25ha [37-63 acres]**	**Very Large Solar Farm >25ha [>63acres]**
5a	M-H		M	M-H	M-H	H	H
5b	M						
5c	M						
5d	M						
5e	M						
5f	M-H						
5g	M-H						

LCT 5 SOLAR PV SENSITIVITY ANALYSIS
• The undulating topography, small scale field pattern and frequency of human-scale landscape features makes LCT 5 particularly sensitive to a medium, large or very large solar farm that would be out of scale and may involve the removal of traditional landscape features, and may bring a perception of human influence in a landscape with limited built development and man-made structures and perceived naturalness; • The greatest potential for solar PV development within LCT 5 is for a very small solar farm or potentially a solar array at the smaller end of the 'small solar farm' category, where landform is more uniform, with simple land cover and some enclosure, where there is a greater influence from built development, and where the field pattern is larger, for example parts of LCA 5b, LCA 5d and LCA 5e; • However, even a small scale solar PV development is likely to be contrary to the landscape management strategy in the 2016 Landscape Strategy which is to conserve the rural pastoral character of the farmland, the small scale ancient field pattern and views; • Any small scale solar PV development should consider mitigation opportunities to enhance the hedgerow and woodland network in accordance with the landscape management strategy in the 2016 Landscape Strategy, and to help screen the development; • Any small scale solar development should respect the setting of picturesque villages; • Any small scale solar PV development should avoid creating adverse visual impact to sensitive views, in particular panoramic views across the Weaver Valley and views to the sandstone ridge and other sensitive skyline ridges which act as a backdrop.

SENSITIVITY TO SOLAR PV DEVELOPMENT
LCT 6: ENCLOSED FARMLAND



There are 5 Landscape Character Areas within LCT 6:
LCA 6a: *Willaston*; LCA 6b: *Neston*; LCA 6c: *Neston to Saughall*;
LCA 6d: *Ness, Burton, Puddington & Shotwick Slopes*; LCA 6e: *Capenhurst Plateau*

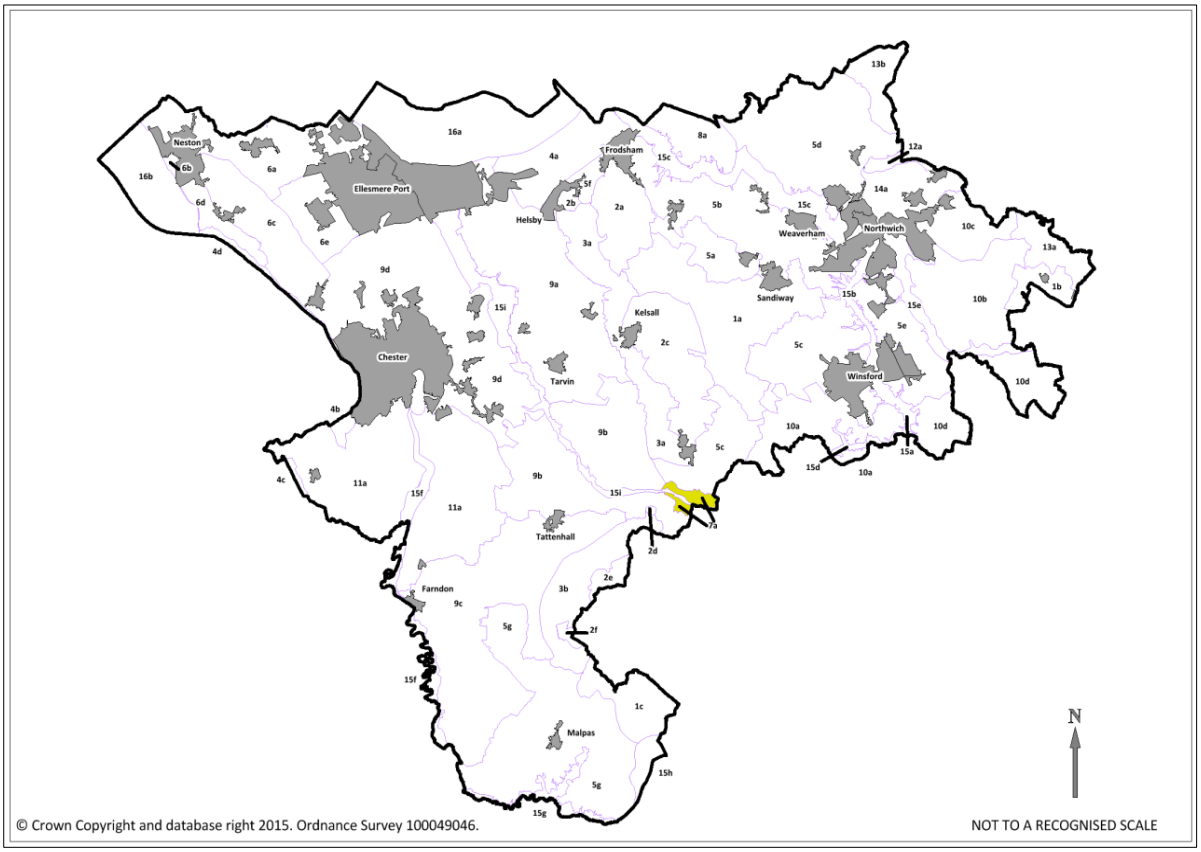
LCT 6 SENSITIVITY OF KEY CHARACTERISTICS TO SOLAR PV DEVELOPMENT	
Sensitivity Attributes	**Summary of Sensitivity**
Natural & Physical	• The relatively flat uniform landform and simple land cover with occasional variety reduces sensitivity of the LCT to the principle of solar PV development; • The generally small-medium scale field pattern and frequent human-scale landscape features increases sensitivity to medium and larger scale development.
Cultural, Heritage & Historic	• There are locally significant historic assets where impact on setting should be carefully considered; • Generally recreational use is locally significant with medium sensitivity.
Built Development & Settlement Pattern	• The influence of built development makes some parts less sensitive, but in other areas there is a perceived naturalness, increasing sensitivity to solar PV development; • The mostly small scale, low density, dispersed settlement pattern is highly sensitive to solar PV development that would be out of scale

LCT 6 SENSITIVITY OF KEY CHARACTERISTICS TO SOLAR PV DEVELOPMENT	
Sensitivity Attributes	**Summary of Sensitivity**
	and increase the perception of human influence.
Perceptual & Visual	• Skylines are generally not prominent and intervisibility is limited, but there are highly sensitive views and visual receptors increasing sensitivity in some character areas.
Qualitative	• Generally pleasant scenic quality and some distinctiveness, with some areas designated as Areas of Special County Value (ASCV), of high sensitivity.

LCT 6 SOLAR PV SENSITIVITY ASSESSMENT							
LCA SENSITIVITY			**LCT 6 SENSITIVITY**				
LCA	**Sensitivity**		**Very Small Solar Farm <1ha [<2.5acres]**	**Small Solar Farm 1-6ha [2.5-15 acres]**	**Medium Solar Farm 6-15ha [15-37 acres]**	**Large Solar Farm 15-25ha [37-63 acres]**	**Very Large Solar Farm >25ha [>63acres]**
6a	M		L-M	L-M	M	M-H	H
6b	M-H						
6c	M						
6d	M						
6e	L-M						

LCT 6 SOLAR PV SENSITIVITY ANALYSIS
• LCT 6 is particularly sensitive to a large or very large solar farm that would be overly dominant within the generally small-medium scale field pattern that may involve the removal of traditional landscape features, and that may bring a perception of human influence in a landscape with limited built development and man-made structures and perceived naturalness; • The greatest potential for solar PV development within LCT 6 is for a very small solar farm or a small solar farm where existing boundary features are retained to help screen the development; • Intervisibility is generally low but a very small or small solar farm should avoid sensitive views such as views from neighbouring landscapes in the west and westwards across the Dee estuary from the sloping farmland in parts of LCA 6a, 6b, 6c and 6d; • Any small or medium scale solar PV development in LCT 6 should conserve the traditional rural historic field pattern in accordance with the landscape management strategy in the 2016 Landscape Strategy; • Any small or medium scale solar PV development in LCT 6 should consider mitigation opportunities to enhance woodland cover and replace hedgerows in accordance with the landscape management strategy in the 2016 Landscape Strategy, and to help screen the development; • Any solar farm should avoid the highest quality land within the ASCV.

SENSITIVITY TO SOLAR PV DEVELOPMENT
LCT 7: ROLLING FARMLAND



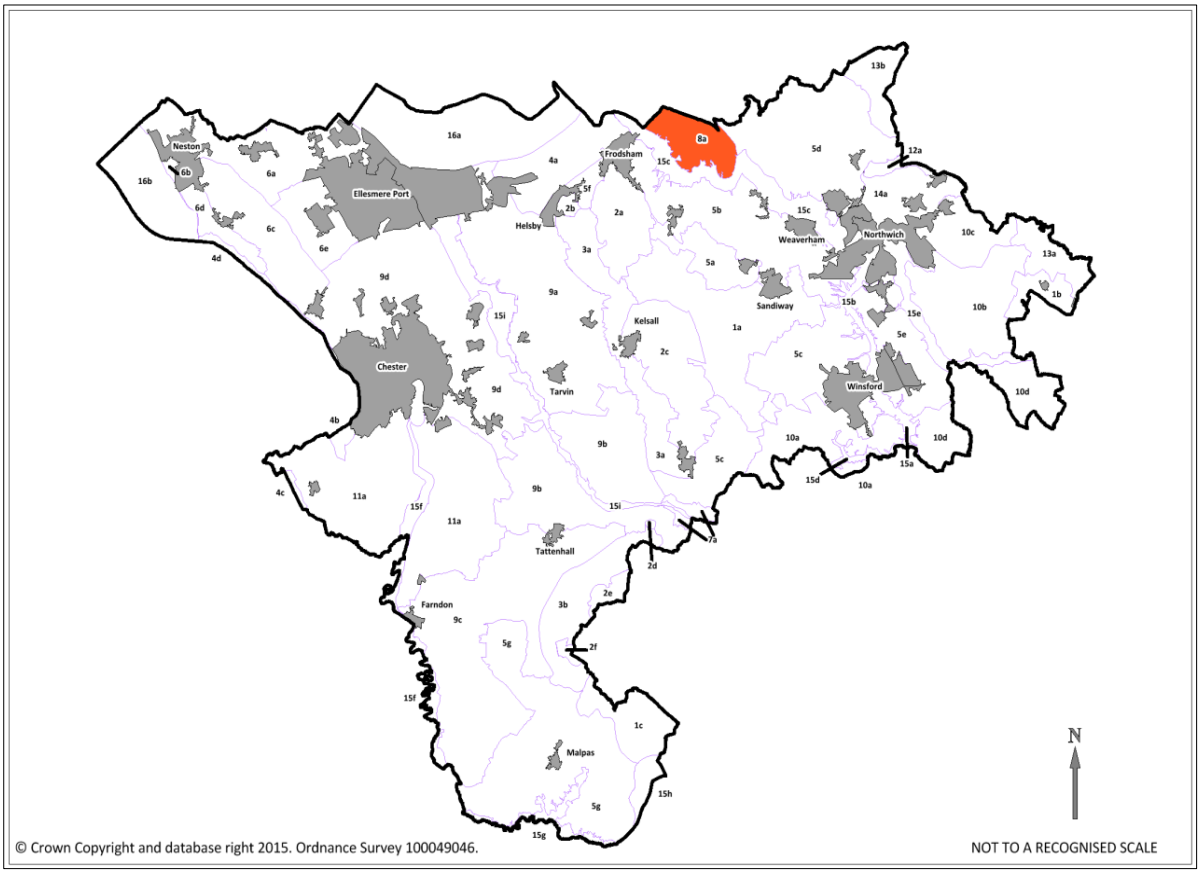
There is 1 Landscape Character Area within LCT 7:
LCA 7a: *Tiverton & Tilston*

LCT 7 SENSITIVITY OF KEY CHARACTERISTICS TO SOLAR PV DEVELOPMENT	
Sensitivity Attributes	**Summary of Sensitivity**
Natural & Physical	• The complex rolling topography makes this LCT sensitive to solar PV development in principle, although the medium scale field pattern with some human scale landscape features and enclosure reduces sensitivity.
Cultural, Heritage & Historic	• There are significant historic assets where impact on setting should be carefully considered; • The area is locally significant for recreational uses associated with the canal corridor.
Built Development & Settlement Pattern	• Some built development and man-made structures within the road, canal and railway corridor reduce sensitivity, but the mostly small scale, low density, dispersed settlement pattern increase sensitive to solar PV development.
Perceptual & Visual	• The LCT is visually sensitive with prominent rolling skylines and views from high ground to important landmark features including Beeston Castle.
Qualitative	• Relatively high scenic quality of this distinctive landscape that is unique with CWaC.

LCT 7 SOLAR PV SENSITIVITY ASSESSMENT							
LCA SENSITIVITY			LCT 7 SENSITIVITY				
LCA	Sensitivity		Very Small Solar Farm <1ha [<2.5acres]	Small Solar Farm 1-6ha [2.5-15 acres]	Medium Solar Farm 6-15ha [15-37 acres]	Large Solar Farm 15-25ha [37-63 acres]	Very Large Solar Farm >25ha [>63acres]
7a	M-H		M-H	H	H	H	H

LCT 7 SOLAR PV SENSITIVITY ANALYSIS
• LCT 7 is particularly sensitive to any form of solar PV development due to the complex, rolling topography, small scale, low density dispersed settlement pattern, high scenic quality, prominent rolling skylines and important views; • Even a very small solar farm could affect these key characteristics, and could be contrary to the landscape management strategy in the 2016 Landscape Strategy which is to conserve the pastoral character of the landscape; • Any very small scale solar farm should conserve ancient field patterns, maintain an intact hedgerow network including gapping-up incomplete hedges in accordance with guidelines in the 2016 Landscape Strategy – however, strengthening of hedgerow boundaries is unlikely to provide a sufficient screen to development due to the rolling landform.

SENSITIVITY TO SOLAR PV DEVELOPMENT
LCT 8: HEATHY FARMLAND & WOODLAND



There is only 1 Landscape Character Area within LCT 8:
LCA 8a: *Aston*

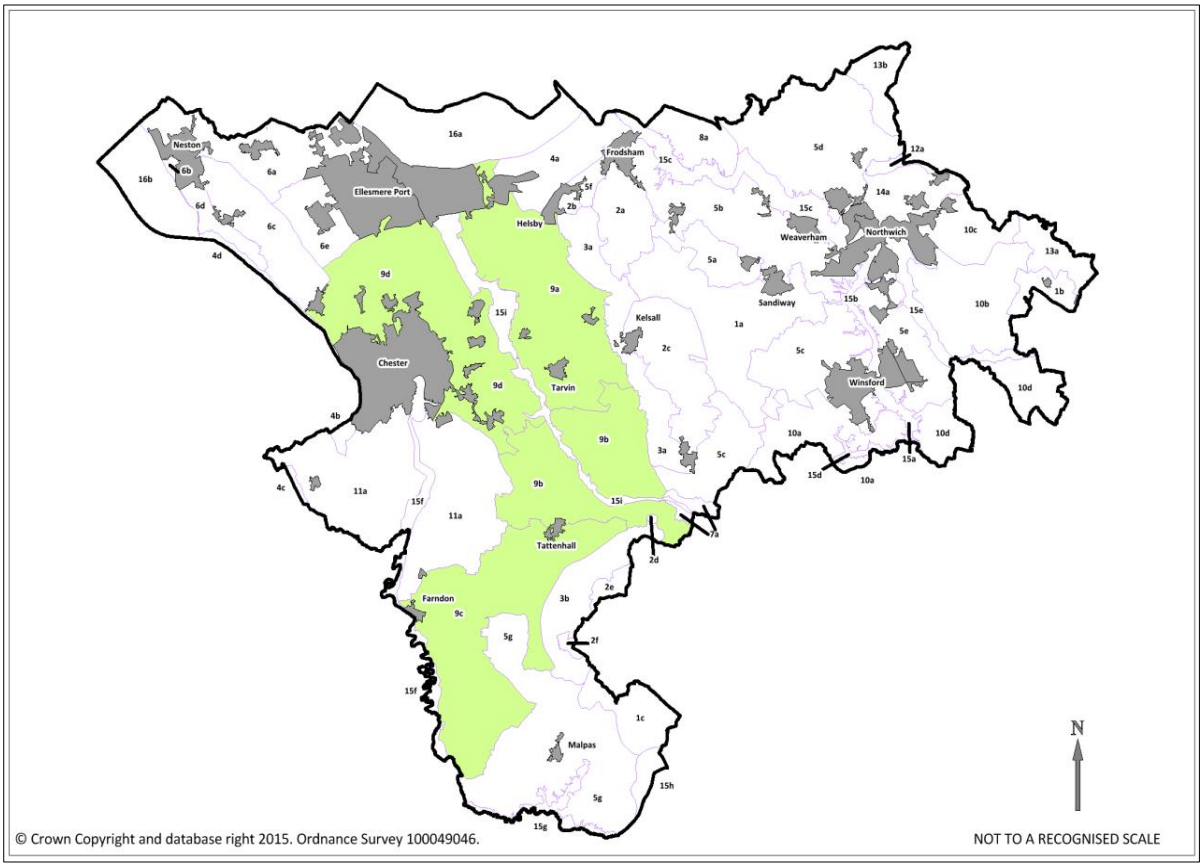
LCT 8 SENSITIVITY OF KEY CHARACTERISTICS TO SOLAR PV DEVELOPMENT	
Sensitivity Attributes	**Summary of Sensitivity**
Natural & Physical	• The generally open character of this LCT makes it sensitive to the principle of solar PV development, although deciduous woodland provides some cover; • The uniform, gently undulating landform with simple land cover and medium to large scale field pattern lacking frequent human scale landscape features reduces sensitivity to medium and larger scale development in some parts.
Cultural, Heritage & Historic	• There are some historic assets including designed parkland where impact on setting should be carefully considered; • The area is not particularly sensitive in recreational land use terms.
Built Development & Settlement Pattern	• The influence of built development and activity within the road, canal and railway corridor reduce sensitivity, but the mostly small scale, low density, dispersed settlement pattern increase sensitive to solar PV development.
Perceptual & Visual	• The rising ground presents a prominent skyline with strong intervisibility and views to neighbouring landscapes, making this LCT visually highly sensitive.
Qualitative	• Relatively high scenic quality of this distinctive landscape that is

LCT 8 SENSITIVITY OF KEY CHARACTERISTICS TO SOLAR PV DEVELOPMENT	
Sensitivity Attributes	**Summary of Sensitivity**
	unique with CWaC.

LCT 8 SOLAR PV SENSITIVITY ASSESSMENT							
LCA SENSITIVITY			**LCT 8 SENSITIVITY**				
LCA	**Sensitivity**		**Very Small Solar Farm <1ha [<2.5acres]**	**Small Solar Farm 1-6ha [2.5-15 acres]**	**Medium Solar Farm 6-15ha [15-37 acres]**	**Large Solar Farm 15-25ha [37-63 acres]**	**Very Large Solar Farm >25ha [>63acres]**
8a	M-H		M-H	H	H	H	H

LCT 8 SOLAR PV SENSITIVITY ANALYSIS
• LCT 8 is particularly sensitive to any form of solar PV development due to the prominent skyline, strong intervisibility and views to/from neighbouring landscapes, in particular the sandstone ridge and Weaver Valley, making this LCT visually highly sensitive; • The sense of openness emphasised by the medium to large scale field pattern, low hedges and lack of hedgerow trees, also increases sensitivity making it difficult to screen any solar PV development; • Even a very small solar farm could affect the perceived naturalness of a landscape with a mostly small scale, low density, dispersed settlement pattern; • Any very small scale solar farm should seek to enhance the hedgerow, tree and woodland network in accordance with the landscape management strategy in the 2016 Landscape Strategy, which could provide some screening to development – however, enhancing the vegetation network is unlikely to provide a sufficient screen to development due to the visual sensitivities.

SENSITIVITY TO SOLAR PV DEVELOPMENT
LCT 9: CHESHIRE PLAIN WEST



There are 4 Landscape Character Areas within LCT 9:
LCA 9a: *Dunham to Tarvin Plain*; LCA 9b: *Hargrave, Hoofield & Beeston Plain*;
LCA 9c: *Tattenhall to Shocklach Plain*; LCA 9d: *Saughall to Waverton Plain*

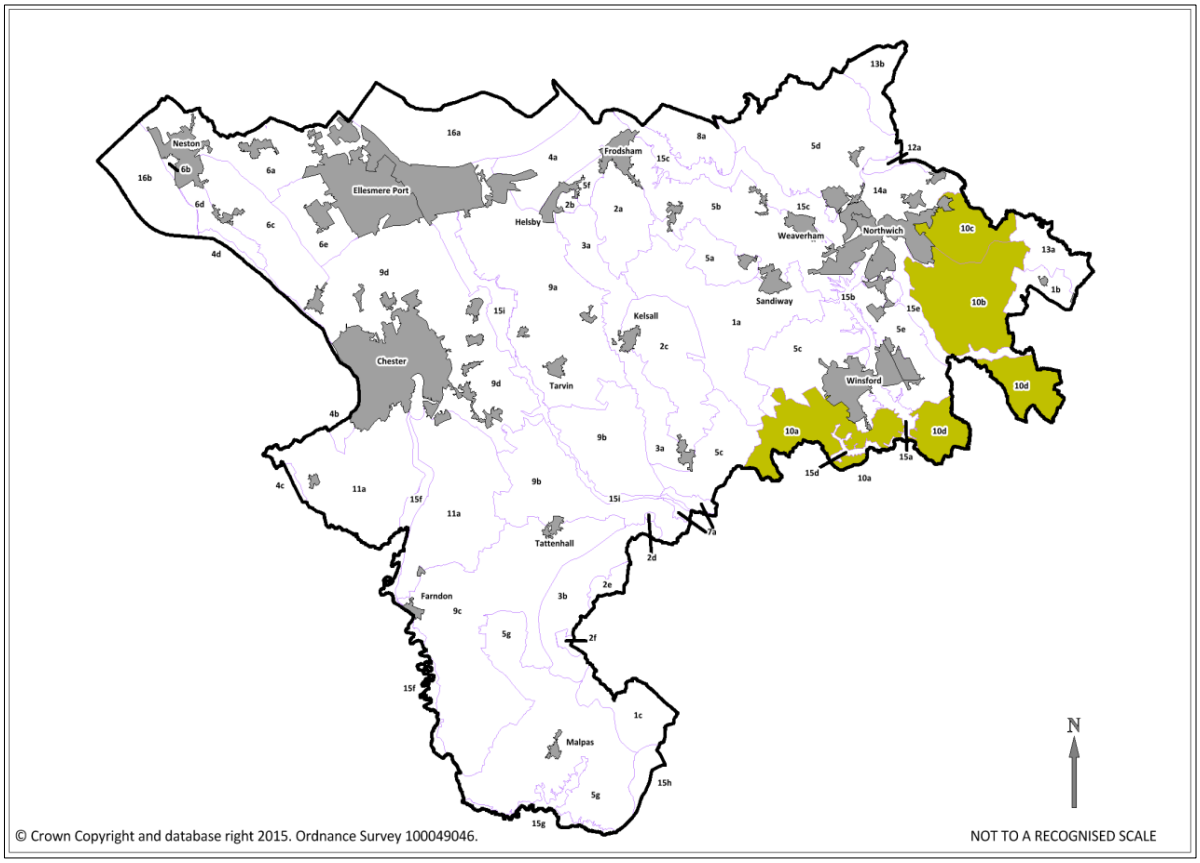
LCT 9 SENSITIVITY OF KEY CHARACTERISTICS TO SOLAR PV DEVELOPMENT	
Sensitivity Attributes	**Summary of Sensitivity**
Natural & Physical	• The wide open landscape is characterised by a medium to small scale field pattern with frequent human scale landscape features that increases sensitivity of the LCT to the principle of solar PV development; • The flat, uniform topography with simple land cover reduces sensitivity.
Cultural, Heritage & Historic	• There are some significant historic assets where impact on setting and regionally significant historic landscape character makes some parts sensitive; • Recreational use is locally significant with medium sensitivity.
Built Development & Settlement Pattern	• The influence of built development makes some parts less sensitive, for example in the west around Chester, but in other areas there is a perceived naturalness making them more sensitive to modern development; • The mostly small scale, low density, dispersed settlement pattern is highly sensitive to solar PV development that would be out of scale and increase the perception of human influence.

LCT 9 SENSITIVITY OF KEY CHARACTERISTICS TO SOLAR PV DEVELOPMENT	
Sensitivity Attributes	**Summary of Sensitivity**
Perceptual & Visual	• The sandstone ridge provides a prominent and distinctive skyline with highly sensitive intervisibility and important views.
Qualitative	• A common landscape but the pastoral plain is representative of CWaC with pleasant scenic quality and thus sensitive to development that affects the characteristic sense of place.

LCT 9 SOLAR PV SENSITIVITY ASSESSMENT							
LCA SENSITIVITY			**LCT 9 SENSITIVITY**				
LCA	**Sensitivity**		**Very Small Solar Farm <1ha [<2.5acres]**	**Small Solar Farm 1-6ha [2.5-15 acres]**	**Medium Solar Farm 6-15ha [15-37 acres]**	**Large Solar Farm 15-25ha [37-63 acres]**	**Very Large Solar Farm >25ha [>63acres]**
9a	M-H		M	M-H	H	H	H
9b	M-H						
9c	M-H						
9d	M						

LCT 9 SOLAR PV SENSITIVITY ANALYSIS
• The Cheshire Plain West is particularly sensitive to a medium, large or very large solar farm that would be out of scale with the medium to small scale field pattern, that may involve the removal of traditional agricultural landscape features and that may bring a perception of human influence in a landscape with limited built development and man-made structures and a perceived naturalness; • A small solar farm may also adversely affect landscape scale by dominating the mostly small scale, low density, dispersed settlement pattern and reducing perceived naturalness; • The greatest potential for solar PV development within LCT 9 is for a very small solar farm or potentially a solar array at the smaller end of the 'small solar farm' category, where existing boundary features are retained to help screen the development; • Even a small scale solar PV development could be visually prominent in important, panoramic and long distance views across the plain from neighbouring landscapes, especially when looking down across the plain from the sandstone ridge; • Any small scale solar PV development should conserve the historic field pattern of hawthorn hedgerows and hedgerow trees, and the regionally important historic landscape comprising medieval field systems and ridge & furrow, in accordance with the landscape management strategy in the 2016 Landscape Strategy; • Any small scale solar PV development should consider mitigation opportunities to restore the historic field pattern of hawthorn hedgerows and hedgerow trees in accordance with the landscape management strategy in the 2016 Landscape Strategy, and to help screen the development; • Any small scale solar PV development should avoid creating adverse visual impact to sensitive views, in particular views from higher ground on the sandstone ridge and open views across the plain.

SENSITIVITY TO SOLAR PV DEVELOPMENT
LCT 10: CHESHIRE PLAIN EAST



There are 4 Landscape Character Areas within LCT 10:
LCA 10a: *Darnhall Plain*; LCA 10b: *Stublach Plain*; LCA 10c: *Lostock Plain*;
LCA 10d: *Wimboldsley and Sproston Plain*

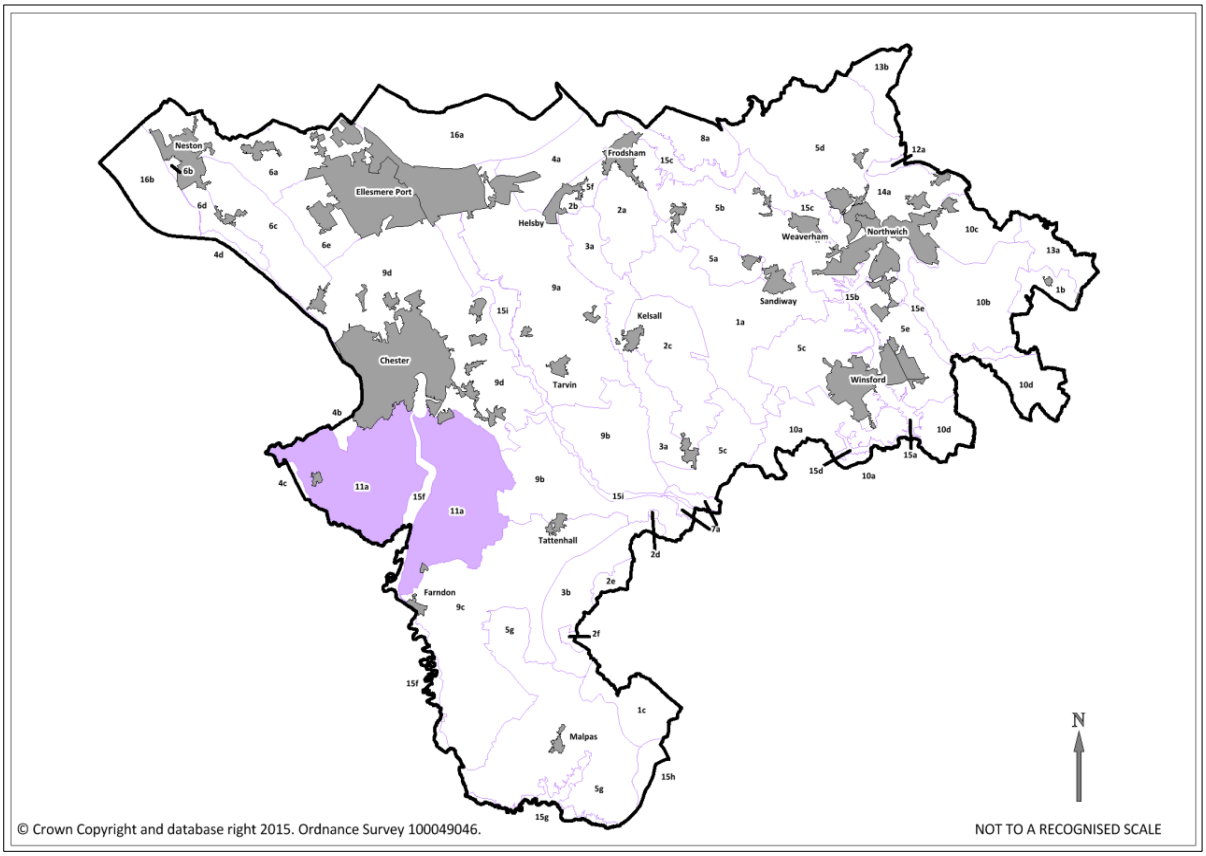
LCT 10 SENSITIVITY OF KEY CHARACTERISTICS TO SOLAR PV DEVELOPMENT	
Sensitivity Attributes	**Summary of Sensitivity**
Natural & Physical	• The flat, uniform landscape with simple variety in land cover reduces sensitivity of the LCT to the principle of solar energy development; • However, the topographically open landform with medium to small scale field pattern and frequent human scale landscape features increases sensitivity to solar PV development.
Cultural, Heritage & Historic	• There are some significant historic assets where impact on setting and historic landscape character should be carefully considered; • Low level of recreational use is of low to medium sensitivity.
Built Development & Settlement Pattern	• The influence of built development makes some parts of the LCT less sensitive, but the mostly small scale, low density, dispersed settlement pattern is highly sensitive to solar PV development that would be out of scale and increase the perception of human influence.
Perceptual & Visual	• Skylines are generally not prominent, with locally significant views, limited intervisibility and visual receptors reducing sensitivity; however LCA 10a: *Darnhall Plain* is the exception where there is strong intervisibility and wider ranging views increasing sensitivity.

LCT 10 SENSITIVITY OF KEY CHARACTERISTICS TO SOLAR PV DEVELOPMENT	
Sensitivity Attributes	**Summary of Sensitivity**
Qualitative	• In general the pastoral plain is a common landscape representative of CWaC with pleasant scenic quality and thus sensitive to development that affects the characteristic sense of place; • However parts of the landscape is more distinctive being influenced by features associated with the brine/salt extraction and gas storage industries with a historical land use legacy.

LCT 10 SOLAR PV SENSITIVITY ASSESSMENT						
LCA SENSITIVITY			**LCT 10 SENSITIVITY**			
LCA	**Sensitivity**		**Very Small Solar Farm <1ha [<2.5acres]**	**Small Solar Farm 1-6ha [2.5-15 acres]**	**Medium Solar Farm 6-15ha [15-37 acres]**	**Large Solar Farm 15-25ha [37-63 acres]**	**Very Large Solar Farm >25ha [>63acres]**
10a	M		L-M	M	M-H	H	H
10b	L-M						
10c	M						
10d	L-M						

LCT 10 SOLAR PV SENSITIVITY ANALYSIS
• The Cheshire Plain East is particularly sensitive to a medium, large or very large solar farm that would be out of scale with the medium to small scale field pattern, that may involve the removal of traditional agricultural landscape features and that may bring a perception of human influence in landscape character areas with limited built development and man-made structures and a perceived naturalness; • LCA 10a: *Darnhall Plain* is particularly sensitive where there is a strong field pattern and traditional rural character with limited development, important views across the plain and strong intervisibility with neighbouring landscapes; • A small solar farm may adversely affect landscape scale by dominating the mostly small scale, low density, dispersed settlement pattern, reducing perceived naturalness; • The greatest potential for solar PV development within LCT 10 is for a very small solar farm or potentially a solar array at the smaller end of the 'small solar farm' category, where existing boundary features are retained to help screen the development; • There is also potential for a very small solar farm or a small solar farm where there is existing prominent infrastructure associated with the brine/salt extraction and gas storage industries in LCA 10b: *Stublach Plain* and LCA 10c: *Lostock Plain;* • Any small scale solar PV development should conserve the rural pastoral character of the plain by conserving the small scale field pattern, in accordance with the landscape management strategy in the 2016 Landscape Strategy; • Any small scale solar PV development should consider mitigation opportunities to restore hedgerows and plant new hedgerow trees in accordance with the landscape management strategy in the 2016 Landscape Strategy, and to help screen the development.

SENSITIVITY TO SOLAR PV DEVELOPMENT
LCT 11: ESTATE FARMLAND



There is 1 Landscape Character Area within LCT 11:
LCA 11a: *Grosvenor Estate*

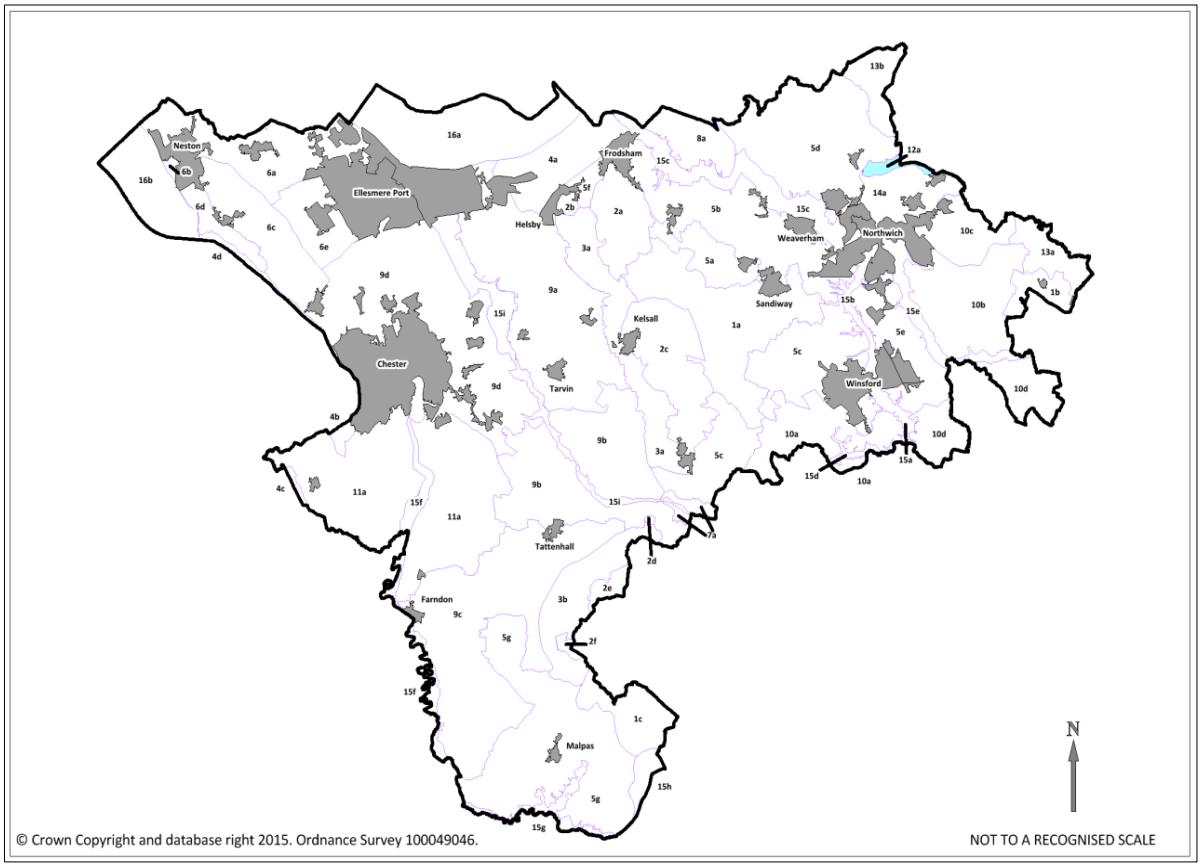
LCT 11 SENSITIVITY OF KEY CHARACTERISTICS TO SOLAR PV DEVELOPMENT	
Sensitivity Attributes	**Summary of Sensitivity**
Natural & Physical	• The medium to small scale field pattern with frequent human scale landscape features increases the sensitivity of this LCT to solar PV development; • The mostly enclosed, uniform gently undulating landform is of less sensitivity.
Cultural, Heritage & Historic	• The LCT is of high historic value and contains significant historic assets where solar PV development could impact on setting and on historic landscape character; • The area is not particularly sensitive in recreational land use terms.
Built Development & Settlement Pattern	• Some modern built development lacks prominence with reduced sensitivity, but the mostly small scale, low density, dispersed settlement pattern increases sensitive to solar PV development that would be out of scale and increase the perception of human influence.
Perceptual & Visual	• A moderately sensitive landscape in visual terms where the skyline has some prominence but is undistinctive, with some intervisibility, but important views to landmark features increases sensitivity;

LCT 11 SENSITIVITY OF KEY CHARACTERISTICS TO SOLAR PV DEVELOPMENT	
Sensitivity Attributes	**Summary of Sensitivity**
Qualitative	• This is a unique, distinctive landscape of high scenic quality mostly designated as an Area of Special County Value (ASCV), and thus highly sensitive to solar PV development.

LCT 11 SOLAR PV SENSITIVITY ASSESSMENT							
LCA SENSITIVITY			**LCT 11 SENSITIVITY**				
LCA	**Sensitivity**		**Very Small Solar Farm <1ha [<2.5acres]**	**Small Solar Farm 1-6ha [2.5-15 acres]**	**Medium Solar Farm 6-15ha [15-37 acres]**	**Large Solar Farm 15-25ha [37-63 acres]**	**Very Large Solar Farm >25ha [>63acres]**
11a	M-H		M-H	M-H	H	H	H

LCT 11 SOLAR PV SENSITIVITY ANALYSIS
• LCT 11 is particularly sensitive to any form of solar PV development due to its high scenic quality, rarity and distinctiveness within CWaC, and its significant historic value making it highly sensitive; • Even a very small solar farm could affect the perceived naturalness of a small scale landscape with frequent landscape-scale features and a mostly small scale, low density, dispersed settlement pattern; • Even a very small solar farm could affect the setting and views within the designated historic park and garden at Eaton and the architectural integrity of the estate villages • There may be some potential for a very small solar farm or a solar array at the smaller end of the 'small solar farm' category in an area already influenced by built development in the northern parts of the LCT within the A55 road corridor; • Any very small scale solar farm should seek to enhance the hedgerow, tree and woodland network in accordance with the landscape management strategy in the 2016 Landscape Strategy, which could provide some screening to development – however, new development should have a strong reference to estate village scale, layout, architecture and planting; • Any solar farm should avoid the highest quality land within the ASCV.

SENSITIVITY TO SOLAR PV DEVELOPMENT
LCT 12: MERE BASIN



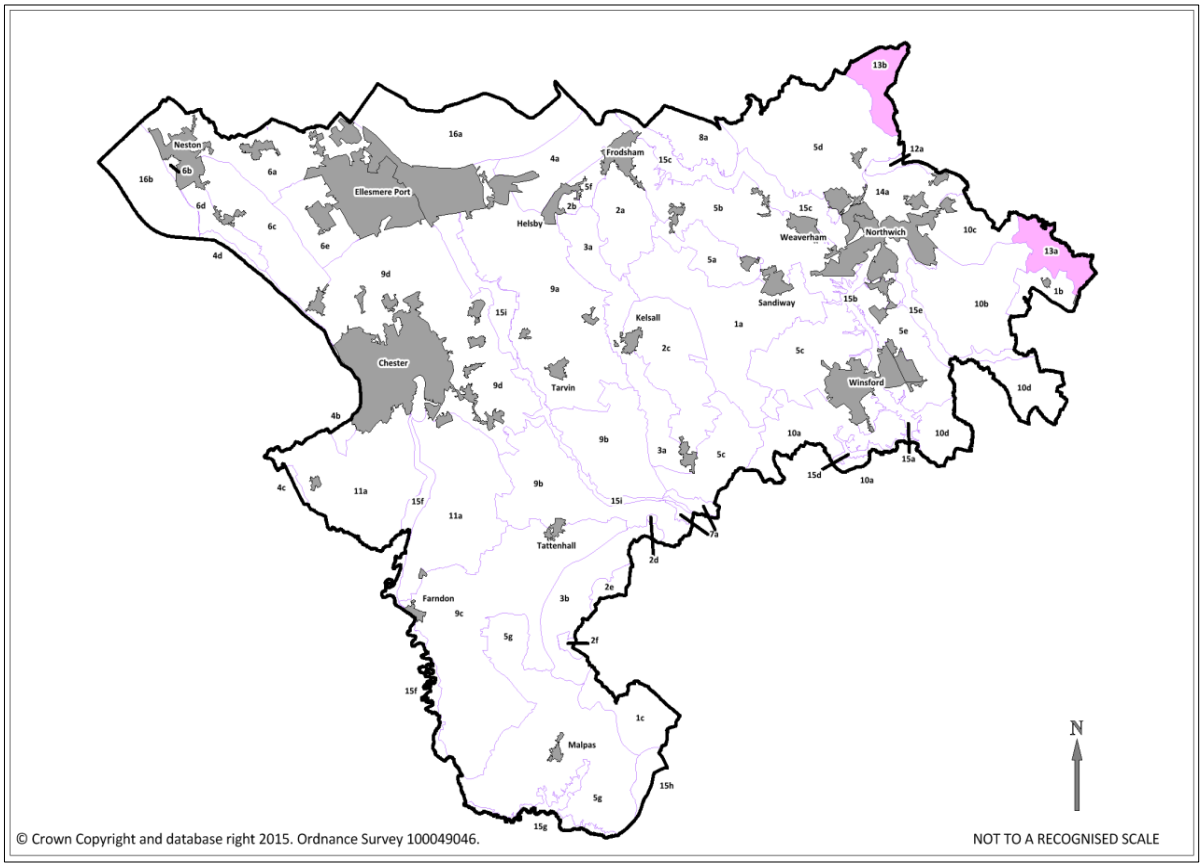
There is 1 Landscape Character Area within LCT 12:
LCA 12a: *Budworth Mere*

LCT 12 SENSITIVITY OF KEY CHARACTERISTICS TO SOLAR PV DEVELOPMENT	
Sensitivity Attributes	**Summary of Sensitivity**
Natural & Physical	• The steep basin-like landform, mosaic of semi-natural habitats and presence of human-scale features means the LCT is highly sensitive to the principle of solar PV development; • The medium scale field pattern and enclosure reduces sensitivity in general.
Cultural, Heritage & Historic	• There are few historic assets but some significant local recreational use.
Built Development & Settlement Pattern	• The influence of built development and prominent man-made structures is limited to within the road corridor, which together with the mostly small scale, low density and dispersed settlement pattern gives a perceived naturalness and thus high sensitivity to solar PV development.
Perceptual & Visual	• The skyline is not prominent but the simple ridgeline defining the top of the basin-like landscape forms a strong skyline from where views are locally significant with some intervisibility.
Qualitative	• A rarely occurring, distinctive landscape with some scenic quality.

LCT 12 SOLAR PV SENSITIVITY ASSESSMENT							
LCA SENSITIVITY			LCT 12 SENSITIVITY				
LCA	Sensitivity		Very Small Solar Farm <1ha [<2.5acres]	Small Solar Farm 1-6ha [2.5-15 acres]	Medium Solar Farm 6-15ha [15-37 acres]	Large Solar Farm 15-25ha [37-63 acres]	Very Large Solar Farm >25ha [>63acres]
12a	M-H		M	M-H	H	H	H

LCT 12 SOLAR PV SENSITIVITY ANALYSIS
• LCT 12 is particularly sensitive to a medium, large or very large solar farm that would be out of scale with field patterns, that may involve the removal of traditional landscape features and semi-natural habitats and that may bring a perception of human influence in a landscape with limited built development and man-made structures and a perceived naturalness; • The steep basin-like landform, strong skyline and views across the mere are visually sensitive to even very small scale solar PV development; • The greatest potential for solar PV development within LCT 12 is for a very small solar farm located on flatter ground and where existing boundary features are retained to help screen the development – however, visual impact in views from higher ground on the LCT boundary would be difficult to mitigate; • Any solar PV development should comply with the landscape management strategy in the 2016 Landscape Strategy which is to conserve the inherent sense of tranquillity of the landscape; • Any small scale solar PV development should also conserve the diversity of natural habitats in accordance with the landscape management strategy in the 2016 Landscape Strategy; • Any small scale solar PV development should avoid creating adverse visual impact to sensitive views, including views to Budworth Church and open views across the mere.

SENSITIVITY TO SOLAR PV DEVELOPMENT
LCT 13: LOWLAND FARMLAND & MOSSES



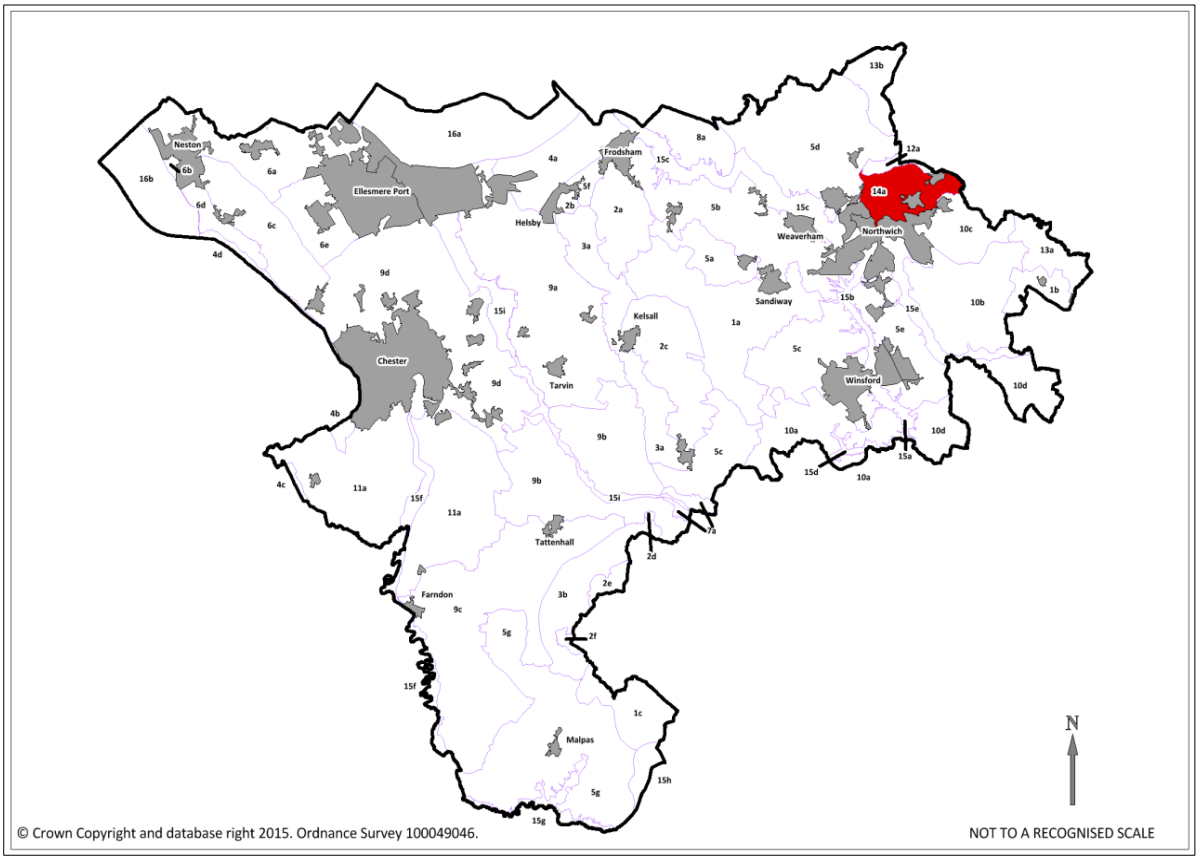
There are 2 Landscape Character Areas within LCT 13:
LCA 13a: *Peover*; LCA 13b: *Arley West*

LCT 13 SENSITIVITY OF KEY CHARACTERISTICS TO SOLAR PV DEVELOPMENT	
Sensitivity Attributes	**Summary of Sensitivity**
Natural & Physical	• The gently undulating, uniform landscape with simple land cover could potentially support solar PV development in principle; • However, the medium to small scale field pattern with frequent human-scale features are sensitive to solar PV development.
Cultural, Heritage & Historic	• Historic assets are generally of local significance although impact on setting should be carefully considered; • Low level, informal local recreational use reduces sensitivity.
Built Development & Settlement Pattern	• Some built development but mostly limited, and a small scale, low density, dispersed settlement pattern which makes the LCT highly sensitive to solar PV development that would be out of scale and increase the perception of human influence.
Perceptual & Visual	• Skylines are not prominent, with limited views and intervisibility and generally moderate sensitivity to a limited range of visual receptors.
Qualitative	• A more common landscape with some distinctive features and overall medium scenic quality.

LCT 13 SOLAR PV SENSITIVITY ASSESSMENT							
LCA SENSITIVITY			LCT 13 SENSITIVITY				
LCA	Sensitivity		Very Small Solar Farm <1ha [<2.5acres]	Small Solar Farm 1-6ha [2.5-15 acres]	Medium Solar Farm 6-15ha [15-37 acres]	Large Solar Farm 15-25ha [37-63 acres]	Very Large Solar Farm >25ha [>63acres]
13a	L-M		L-M	L-M	M	M-H	H
13b	L-M						

LCT 13 SOLAR PV SENSITIVITY ANALYSIS
• LCT 13 is particularly sensitive to a large or very large solar farm that would be overly dominant within the generally small-medium scale field pattern that may involve the removal of traditional landscape features, and that may bring a perception of human influence in locations with limited built development and man-made structures and perceived naturalness; • The greatest potential for solar PV development within LCT 13 is for a very small solar farm or a small solar farm where existing boundary features are retained to help screen the development and where the intimate character is retained; • Intervisibility is generally low but a very small or small solar farm should avoid sensitive views such as views to landmark features on the skyline; • Any small or medium scale solar PV development in LCT 13 should conserve the remote, rural and intimate character of the landscape in accordance with the landscape management strategy in the 2016 Landscape Strategy.

SENSITIVITY TO SOLAR PV DEVELOPMENT
LCT 14: SALT HERITAGE LANDSCAPE



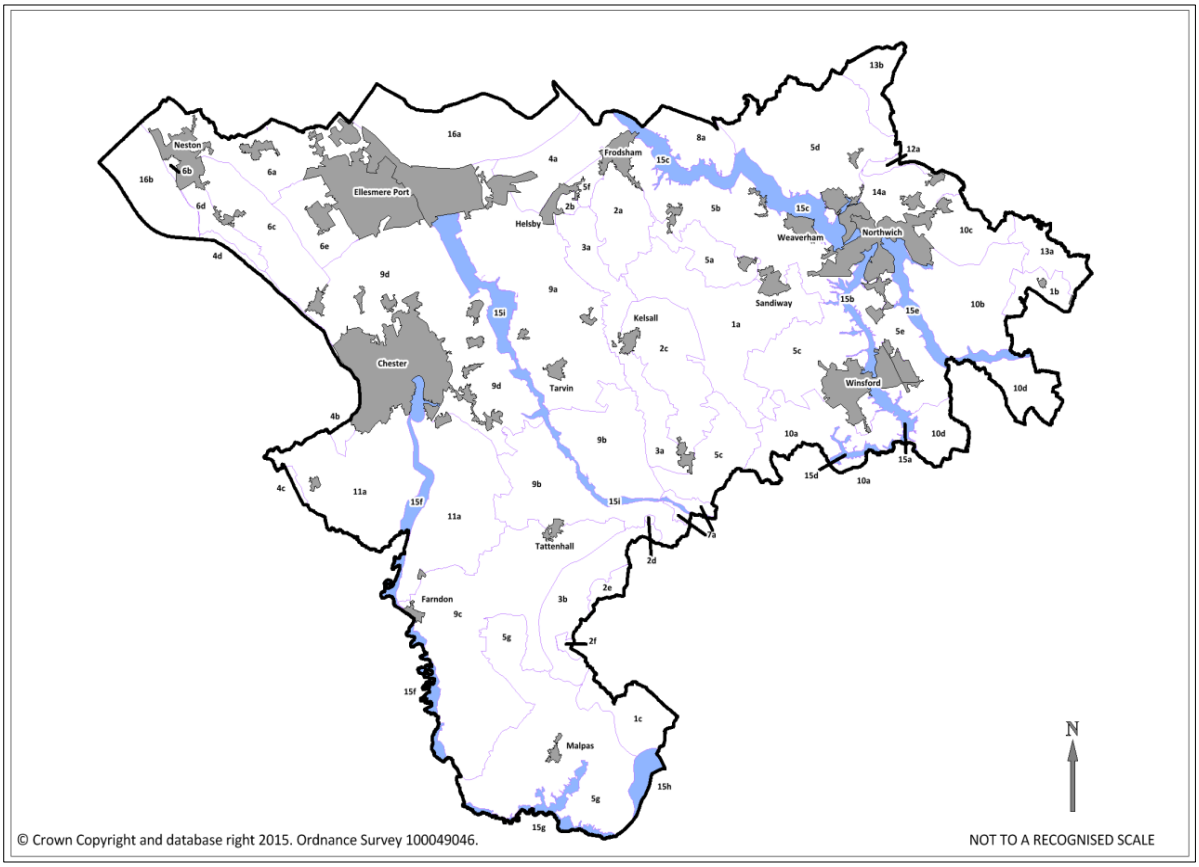
There is 1 Landscape Character Area within LCT 14:
LCA 14a: *Northwich*

LCT 14 SENSITIVITY OF KEY CHARACTERISTICS TO SOLAR PV DEVELOPMENT	
Sensitivity Attributes	**Summary of Sensitivity**
Natural & Physical	• A complex post-industrial landscape of subsidence flashes surrounded by a mosaic of land uses with potentially some sensitivity to solar PV development; • The medium to large scale field pattern reduces sensitivity to medium or larger scale solar development where there are few landscape-scale features.
Cultural, Heritage & Historic	• Historic assets are generally of local significance although impact on setting should be carefully considered; • Well used for recreation which increases sensitivity.
Built Development & Settlement Pattern	• Frequent built development, infrastructure, industrial structures and brownfield land reduce sensitivity; • The medium to large scale modern settlement pattern further reduces sensitivity.
Perceptual & Visual	• Generally this LCT is not visually sensitive as the skyline is not prominent, with limited views and intervisibility although there are high numbers of visual receptors.
Qualitative	• A unique distinctive landscape in CWaC but with overall low scenic quality.

LCT 14 SOLAR PV SENSITIVITY ASSESSMENT							
LCA SENSITIVITY			LCT 14 SENSITIVITY				
LCA	Sensitivity		Very Small Solar Farm <1ha [<2.5acres]	Small Solar Farm 1-6ha [2.5-15 acres]	Medium Solar Farm 6-15ha [15-37 acres]	Large Solar Farm 15-25ha [37-63 acres]	Very Large Solar Farm >25ha [>63acres]
14a	L-M		L-M	L-M	M	M-H	H

LCT 14 SOLAR PV SENSITIVITY ANALYSIS
• LCT 14 has the potential to accommodate solar PV development without affecting key landscape characteristics, although a large or very large solar farm is likely to be overly dominant within the landscape; • Any solar PV development should be in keeping with this LCT that is undergoing restoration of derelict industrial land and enhancement that presents opportunities for new landscape creation, in accordance with the landscape management strategy in the 2016 Landscape Strategy; • Any solar PV development should conserve the open undeveloped area between Wincham (South) and Northwich that has been identified as a Candidate Key Settlement Gap where development would lead to coalescence and the loss of identity of the two communities.

SENSITIVITY TO SOLAR PV DEVELOPMENT
LCT 15: RIVER VALLEYS



There are 9 Landscape Character Areas within LCT 15:
LCA 15a: *Upper Weaver Valley;* LCA 15b: *Mid Weaver Valley;* LCA 15c: *Lower Weaver Valley;* LCA 15d: *Ash Brook Valley;* LCA 15e: *Dane Valley;* LCA 15f: *Dee Valley;* LCA 15g: *Wych Valley;* LCA 15h: *Grindley Valley;* LCA 15i: *Gowy Valley*

LCT 15 SENSITIVITY OF KEY CHARACTERISTICS TO SOLAR PV DEVELOPMENT	
Sensitivity Attributes	**Summary of Sensitivity**
Natural & Physical	• Generally steep valley sides with much variety in land cover including human scale landscape features, making this LCT particularly sensitive to solar PV development in principle; • However, there are areas of lower sensitivity where valleys are wider, flatter and scale is larger with fewer landscape features.
Cultural, Heritage & Historic	• The presence of historic assets varies greatly throughout the landscape making this LCT more or less sensitive to solar PV development in principle; • Recreational use also varies throughout the landscape.
Built Development & Settlement Pattern	• Existing built development and prominent structures give some areas lower sensitivity, but other areas are highly sensitive where built development is limited or absent; • The river valleys are mostly unsettled or with a small scale, low density, dispersed settlement pattern which is highly sensitive to solar PV development that would be out of scale and increase the perception of human influence.

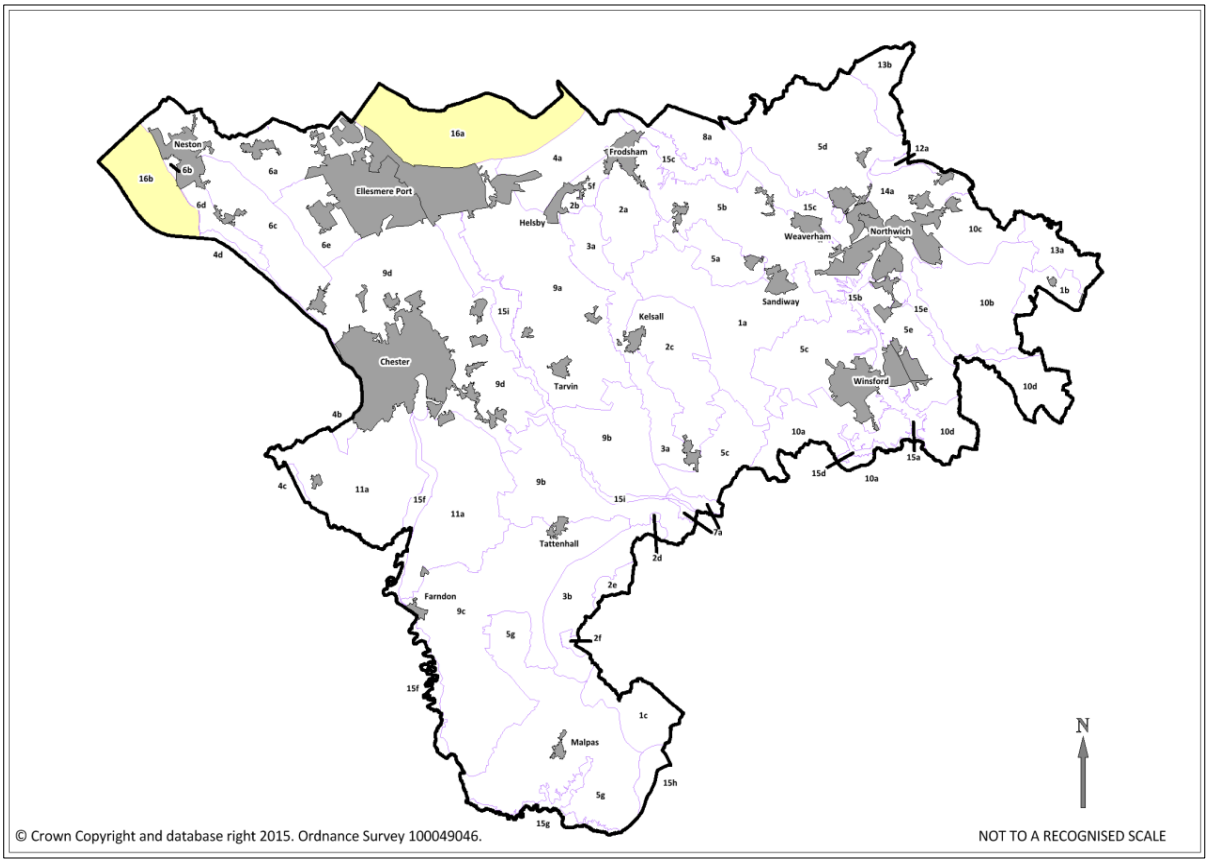
LCT 15 SENSITIVITY OF KEY CHARACTERISTICS TO SOLAR PV DEVELOPMENT	
Sensitivity Attributes	**Summary of Sensitivity**
Perceptual & Visual	• Skylines are prominent and distinctive with little or no development and thus highly sensitive to visible structures including solar PV development, although intervisibility, views and visual receptors are generally limited, with reduced sensitivity.
Qualitative	• Distinctive valleys mostly of high scenic quality, especially the *Upper, Mid and Lower Weaver Valley* and the *Wych Valley* designated as Areas of Special County Value (ASCV), with high sensitivity to the principle of solar PV development.

LCT 15 SOLAR PV SENSITIVITY ASSESSMENT						
LCA SENSITIVITY			**LCT 15 SENSITIVITY**			
LCA	**Sensitivity**		**Very Small Solar Farm <1ha [<2.5acres]**	**Small Solar Farm 1-6ha [2.5-15 acres]**	**Medium Solar Farm 6-15ha [15-37 acres]**	**Large Solar Farm 15-25ha [37-63 acres]**	**Very Large Solar Farm >25ha [>63acres]**
15a	H		M	M-H	H	H	H
15b	H						
15c	H						
15d	H						
15e	M-H						
15f	M-H						
15g	H						
15h	M						
15i	M						

LCT 15 SOLAR PV SENSITIVITY ANALYSIS
• The steep sided river valleys are highly sensitive to solar PV development that would potentially be conspicuous from within the valleys, detracting from their intimate hidden character. There is more potential in LCAs 15h: *Grindley Valley* and LCA 15i: *Gowy Valley* which are wider and flatter; • The river valleys are predominantly unsettled or with a small scale, low density, dispersed settlement pattern which is highly sensitive to solar PV development that would be out of scale and increase the perception of human influence within the undeveloped floodplains; • Some of the river valleys are distinctive and of high scenic quality, especially the *Upper, Mid and Lower Weaver Valley* and the *Wych Valley* designated as Areas of Special County Value (ASCV), with high sensitivity; • LCT 15 is particularly sensitive to a medium, large or very large solar farm that would be out of scale with the medium to small scale field pattern, that may involve the removal of traditional landscape features and that may bring a perception of human influence in a landscape with limited built development and man-made structures and perceived naturalness; • The greatest potential for solar PV development within LCT 15 is for a very small solar farm, and potentially a solar array at the smaller end of the 'small solar farm' category, where the valley is flatter and wider and where existing boundary features and woodland are retained to help screen the development;

- Even a very small or small solar farm could be contrary to landscape management strategies in the 2016 Landscape Strategy to conserve the pastoral character of the landscape and to conserve and enhance the riverside environs, particularly the tree and riparian vegetation cover, and the special ecological community;
- Any small scale solar PV development should conserve the ancient clough woodlands, unimproved grassland and wetland habitats, in accordance with another landscape management strategy in the 2016 Landscape Strategy;
- Any small scale solar PV development should consider mitigation opportunities to increase woodland cover and restore traditional field systems in accordance with a landscape management strategy in the 2016 Landscape Strategy, and to help screen the development;
- Any small scale solar PV development should avoid creating adverse visual impact to sensitive views, in particular views from higher ground on the sandstone ridge and open views across the valleys;
- Any solar farm should avoid the highest quality land within the ASCV.

SENSITIVITY TO SOLAR PV DEVELOPMENT
LCT 16: MUDFLATS & SALTMARSH



There are 2 Landscape Character Areas within LCT 16:
LCA 16a: *Stanlow and Ince Banks*; LCA 16b: *Dee Estuary*

LCT 16 SENSITIVITY OF KEY CHARACTERISTICS TO SOLAR PV DEVELOPMENT	
Sensitivity Attributes	**Summary of Sensitivity**
Natural & Physical	• These flat, uniform, simple, large scale landscapes are in general of low sensitivity to solar PV development in principle, but their open, exposed character makes them highly sensitive.
Cultural, Heritage & Historic	• Historic assets are few or of little significance; • Little or no recreational use, limiting sensitivity.
Built Development & Settlement Pattern	• Lack of any built development on the mudflats and saltmarsh but their character is heavily influenced by frequent development and large industrial structures in adjacent landscapes; • Devoid of any settlement, with high sensitivity.
Perceptual & Visual	• Flat low lying areas with no prominent skyline, although there is extensive visibility and important views across the flats and estuary; LCA 16a: *Stanlow and Ince Banks* is seen in panoramic views from the sandstone ridge at Frodsham and Helsby.
Qualitative	• High scenic quality, rarity and distinctiveness make this LCT highly sensitive to the principle of solar PV development.

LCT 16 SOLAR PV SENSITIVITY ASSESSMENT							
LCA SENSITIVITY			LCT 16 SENSITIVITY				
LCA	Sensitivity		Very Small Solar Farm <1ha [<2.5acres]	Small Solar Farm 1-6ha [2.5-15 acres]	Medium Solar Farm 6-15ha [15-37 acres]	Large Solar Farm 15-25ha [37-63 acres]	Very Large Solar Farm >25ha [>63acres]
16a	H		H	H	H	H	H
16b	H						

LCT 16 SOLAR PV SENSITIVITY ANALYSIS
• LCT 16 is sensitive to any form of solar farm development. These are rare, distinctive landscapes within CWaC with high scenic quality; • Even a very small solar farm on the open exposed mudflats and marsh would be conspicuous and is likely to adversely affect key views from highly sensitive visual receptors due to the extensive visibility; • Furthermore, the mudflats and marsh are unsettled and thus highly sensitivity to the principle of solar PV development that would reduce the perception of naturalness.

6. Summary

Summary of sensitivity to wind energy development

6.1 **Table 6** summarises overall sensitivity of each of the sixteen landscape character types to wind energy development.

Table 6: Summary of overall sensitivity of landscape character types to wind energy development

Landscape Character Type	Smaller Turbines [height 10m-30m]	Medium Turbines [height 30m-80m]	Larger Turbines [height 80m-130m+]
LCT 1: Woodland, Heaths, Meres & Mosses	M	M-H	H
LCT 2: Sandstone Ridge	M-H	H	H
LCT 3: Sandstone Fringe	M	M-H	H
LCT 4: Drained Marsh	L-M	M	M-H
LCT 5: Undulating Enclosed Farmland	L-M	M	M-H
LCT 6: Enclosed Farmland	L-M	M	M-H
LCT 7: Rolling Farmland	M	M-H	H
LCT 8: Heathy Farmland and Woodland	L-M	M	M-H
LCT 9: Cheshire Plain West	M	M-H	H
LCT 10: Cheshire Plain East	L-M	M	M-H
LCT 11: Estate Farmland	M	M-H	H
LCT 12: Mere Basin	M-H	H	H
LCT 13: Lowland Farmland and Mosses	M	M-H	H
LCT 14: Salt Heritage Landscape	L-M	M	M-H
LCT 15: River Valleys	M	M-H	H
LCT 16: Mudflats & Saltmarsh	H	H	H

[height refers to total height to blade tip]

Discussion on sensitivity of LCTs in CWaC to wind energy development

6.2 The assessment has shown that there is limited potential for medium scale turbines (30m-80m height to blade tip) or larger turbines (80m-130m+ height to blade tip) within the borough. Although previous study has identified pockets of "areas of least constraint" to medium and large scale wind development[19] using assessment parameters based on Department of Energy and Climate Change methodology[20] (with some deviations) thus reflecting areas more likely to be considered by the wind energy industry, landscape character sensitivity significantly limits the potential for this scale of wind energy.

6.3 The key characteristics of the CWaC landscape that are sensitive to this scale of wind energy development have been identified as the following:

- Visual prominence and extent of visibility of the sandstone ridge and plain;
- Steep topography and densely wooded sandstone ridge and river valleys;
- Undulating and enclosed farmland and valleys;
- Small scale land cover patterns of small fields, hedgerows, trees and small woods, and other human-scale features in the landscape;
- Limited built development and small scale, low density rural dispersed settlement pattern;
- Panoramic and long distance views from viewpoints or to important landmark features such as the hillforts;
- Relative tranquillity, quietness and perceived naturalness;
- Recognised scenic quality, including extensive Areas of Special County Value (ASCV);
- Historic landscape character including the presence and influence of nationally designated or locally significant heritage assets;
- Landscapes that are distinctive and representative of CWaC with a particular 'sense of place' such as the sandstone ridge and pastoral plain.

6.4 The assessment has identified that there may be some potential for medium or larger turbines in locations that are:

- Large scale, flat, open and exposed;
- Heavily influenced by built development and prominent vertical structures, and infrastructure including busy transport corridors;
- Not prominent with undistinctive skylines;
- Self-contained with limited intervisibility with adjacent landscapes;
- More common landscapes within CWaC, with low scenic quality;
- Less tranquil and less naturalistic.

6.5 Where there is some potential for medium or larger turbines, the pattern of development is likely to be one of single turbines or small groups of turbines within a particular part of the borough rather than being scattered throughout the borough.

[19] Cheshire West & Chester Low Carbon and Renewable Energy Study, Verco, 2012
[20] Renewable and Low-carbon Energy Capacity Methodology for the English Regions, DECC, January 2010

There is very little potential for larger groups (wind farms) of 7-13 turbines that would be out of scale and over-dominant in the CWaC landscape.

6.6 There is most potential in the borough for single small turbines or turbines at the lower end of the medium height category (approximately in the 30m-50m height range) or small groups of turbines with this height range within a particular part of the borough rather than being scattered throughout it that could lead to cumulative effects. Turbines of this height are more likely to be in scale with landscape patterns and features in the landscape such as buildings, mature trees, electricity pylons and tall church spires. However, there is still the potential for turbines of this scale to cause significant adverse effects to key landscape characteristics within a LCA or a wider area where visual sensitivity extends beyond the LCA.

6.7 There are no areas within Cheshire West and Chester rated as 'low sensitivity', where key landscape characteristics and qualities would be considered sufficiently robust to be able to accommodate even small scale wind energy development without adverse effects on any key characteristics.

6.8 Where a range of sensitivity is given within a landscape character type, for example L-M (low-moderate) within the smaller turbines category, there is likely to be lower sensitivity to the smaller height of turbine within the category i.e. 10m, and moderate sensitivity to the larger size of turbine within the category i.e. 30m.

6.9 Similarly, where a range of M-H (moderate-high) sensitivity is given within a landscape character type, for example within the medium turbines category, there is likely to be moderate sensitivity to the smaller height of turbine within the category, i.e. 30m, and higher sensitivity to the larger size of turbine within the category i.e. 80m.

6.10 Even an area rated as low-moderate sensitivity will comprise some key characteristics that are sensitive to development that might cause significant adverse effect. For example, although LCA 4a: *Frodsham, Helsby and Lordship Marshes* has an overall sensitivity rating of 'low-moderate', it is clear from the relevant matrix in the supporting technical appendix, as summarised in Table 3, that the LCA is visually sensitive due to its intervisibility with neighbouring landscapes and views from viewpoints and to important landmark features (in particular the Frodsham Sandstone Ridge including views from the War Memorial, and Helsby Hill). Any proposal for wind development within LCA 4a should show how these sensitive characteristics have been taken into account in its siting, layout and design.

6.11 In this particular example, cumulative landscape and visual effects with the Frodsham Wind Farm currently under construction would also need to be assessed. This LCT 4: *Drained Marsh* has moderate-high sensitivity to larger wind turbines of the height being constructed at Frodsham Wind Farm, where further development of this scale is likely to affect the key visibility characteristics.

Summary of sensitivity to ground mounted solar PV development

6.12 **Table 7** summarises overall sensitivity of each of the sixteen landscape character types to ground mounted solar PV development:

Table 7: Summary of overall sensitivity of landscape character types to solar photovoltaic development

Landscape Character Type	Very Small Solar Farm [<1ha or <2.5acres]	Small Solar Farm [1-6ha or 2.5-15acres]	Medium Solar Farm [6-15ha or 15-37acres]	Large Solar Farm [15-25ha or 37-63acres]	Very Large Solar Farm [>25ha or >63acres]
LCT 1: Woodland, Heaths, Meres & Mosses	M	M-H	H	H	H
LCT 2: Sandstone Ridge	M-H	H	H	H	H
LCT 3: Sandstone Fringe	M-H	M-H	H	H	H
LCT 4: Drained Marsh	L-M	L-M	M	M-H	H
LCT 5: Undulating Enclosed Farmland	M	M-H	M-H	H	H
LCT 6: Enclosed Farmland	L-M	L-M	M	M-H	H
LCT 7: Rolling Farmland	M-H	H	H	H	H
LCT 8: Heathy Farmland and Woodland	M-H	H	H	H	H
LCT 9: Cheshire Plain West	M	M-H	H	H	H
LCT 10: Cheshire Plain East	L-M	M	M-H	H	H
LCT 11: Estate Farmland	M-H	M-H	H	H	H
LCT 12: Mere Basin	M	M-H	H	H	H
LCT 13: Lowland Farmland and Mosses	L-M	L-M	M	M-H	H
LCT 14: Salt Heritage Landscape	L-M	L-M	M	M-H	H
LCT 15: River Valleys	M	M-H	H	H	H
LCT 16: Mudflats & Saltmarsh	H	H	H	H	H

Discussion on sensitivity of LCTs in CWaC to ground mounted solar PV development

6.13 The assessment has shown that landscape character sensitivity significantly limits the potential for a medium solar farm (6ha-15ha), a large solar farm (15ha-25ha) or a very large solar farm (>25ha) within the borough. The key characteristics of the CWaC landscape that are sensitive to this scale of solar PV development have been identified as the following:

- Undulating, rolling or steeply sloping landforms, and prominent skylines such as the sandstone ridge, that are more visually sensitive;
- Open, exposed landscapes such as the Cheshire Plain, even flat or gently undulating landscapes where there are views from nearby high ground such as the sandstone ridge, including panoramic and long distance views from important viewpoints and landmark features such as the hillforts;
- The small scale field pattern of hedgerows, trees and other human-scale landscape features such as traditional agricultural buildings, where large solar farms would be out of scale and over-dominant or could necessitate the removal of sensitive features;
- Limited built development and small scale, low density rural dispersed settlement pattern with a perceived naturalness;
- Recognised scenic quality, including extensive Areas of Special County Value (ASCV);
- Historic landscape character including the presence and influence of nationally designated or locally significant heritage assets;
- Landscapes that are distinctive and representative of CWaC with a particular 'sense of place' such as the sandstone ridge and pastoral plain.

6.14 The assessment has identified that there may be some potential for a medium or a large solar farm in locations that are:

- Flat or gently undulating;
- With a large scale field pattern with few landscape features;
- Already influenced by built development and prominent infrastructure;
- Not prominent with undistinctive skylines;
- Topographically enclosed and self-contained with limited intervisibility with adjacent landscapes;
- More common landscapes within CWaC, with low scenic quality;
- Less naturalistic.

6.15 There is most potential in the borough for a very small solar farm (less than 1 hectare or less than 2.5 acres) or a small solar farm (1-6 hectares or 2.5-15 acres) that would potentially be in scale with the landscape, in particular the small scale field patterns of hedgerows, trees and other human-scale landscape features. Strong boundary features can also mitigate the visual impact of smaller solar arrays by helping to screen them. However, there is still the potential for solar farms of this scale to cause significant adverse effects to key landscape characteristics within a LCA, particularly those that are visually sensitive or where visual sensitivity extends beyond the LCA over a wider area.

6.16 There are no areas within Cheshire West and Chester rated as 'low sensitivity', where key landscape characteristics and qualities would be considered sufficiently robust to be able to accommodate even a very small solar farm development without adverse effects on any key characteristics.

6.17 Where a range of sensitivity is given within a landscape character type, for example L-M (low-moderate) within the small solar farm category, there is likely to be lower sensitivity to the smaller size of solar farm within the category i.e. 1 hectare (2.5 acres), and moderate sensitivity to the larger size of solar farm within the category i.e. 6 hectares (15 acres).

6.18 Similarly, where a range of M-H (moderate-high) sensitivity is given within a landscape character type, for example within the medium solar farm category, there is likely to be moderate sensitivity to the smaller size of solar farm within the category i.e. 6 hectares (15 acres), and higher sensitivity to the larger size of solar farm within the category i.e. 15 hectares (37 acres).

6.19 Even an area rated as 'low-moderate' sensitivity will comprise some key characteristics that are sensitive to development that might cause significant adverse effect. For example, although LCA 13a: *Peover Lowland Farmland and Mosses* has an overall sensitivity rating of 'low-moderate', it is clear from the relevant matrix in the supporting technical appendix, as summarised in Table 5, that the medium to small scale field pattern with frequent landscape-scale features, and the low to medium scale settlement density with little modern development are of higher sensitivity. Any proposal for ground mounted solar PV development within LCA 13a should show how these sensitive characteristics have been taken into account in its siting, layout and design.

6.20 In this particular example, the wider LCT 13: *Lowland Farmland and Mosses* is particularly sensitive to a large solar farm (moderate-high sensitivity) and a very large solar farm (high sensitivity) where these key characteristics and qualities of the landscape are likely to be adversely affected by this type of development.

Appendix A: Key Landscape Characteristics and General Influence on Wind Energy

Landscape Attributes	Key Landscape Considerations	General Influence on Wind Energy Development
Landform	Topography, shape, complexity; distinctive features; influence on views	• Simple, smooth, flat or gently undulating landforms generally have greater capacity than complex, rugged or steep landforms • Larger turbine groups may sometimes be accommodated on simple, flat or gently sloping hill fringe or lowland landscapes • Smaller turbine groups are likely to fit better in a rolling or undulating hill fringe or lowland landscape • Generally turbine height should be proportionate to landform height, with taller turbines on higher hills and smaller turbines on lower ground, to help retain topographic distinctions and contrasts between upland and lowland landscapes • Where sited on ridges or hills, turbine height should be typically less than one-third the perceived height of the ridge or hill to be proportionate to the landform • Development could intrude or be visually confusing if close to distinctive topographical features • Development within lowland landscapes could affect sense of contrast where there is existing wind development on adjoining upland areas • Floodplain landscapes have little capacity due to their essentially open character • Simple flat coastal landscapes probably have greater capacity than complex coastal landscape with combinations of cliffs, headlands or rocky shorelines • Extensive flat lowland plateau or lowland plain landscapes may have capacity to accommodate wind energy development • Development could affect sense of distance
Land use	Land use change, historical continuity	• Development could affect perceptions of 'naturalness' in landscapes largely unaffected by modern influences
Land cover	Pattern, variety and complexity due to the number and diversity of landscape features; infrastructure, settlement & other development	• Extensive areas of homogenous character and similar ground cover generally have greater capacity than landscapes with a smaller pattern and variety of land cover • Large turbine groups may have an adverse 'flattening' effect on landscapes with a complex character and varied land cover where smaller groupings are likely to fit better • Relationship of turbines with the pattern, scale, location, character and setting of other built development, in particular the height of existing tall structures, will influence capacity • May be the need for visual separation to avoid visual conflicts due to contrasts in scale where existing structures are seen in close proximity to turbines • May be the need for visual separation to avoid cumulative effects where existing structures are seen in close proximity to turbines
Rarity	Rare / unusual landscapes with a distinctive 'sense of place'	• Development could affect perceptions of distinctiveness and could physically affect landscapes with a rare or unusual character
Scale	Horizontal and vertical 'size' of the landscape and extent of land	• Development must be in scale with the landscape, including any features in it, otherwise it will either dominate or appear too small and trivial

Landscape Attributes	Key Landscape Considerations	General Influence on Wind Energy Development
	visible (scale generally increases with elevation and distance); size of features in the landscape	• Intimate and small scale landscapes generally have less capacity than large scale landscapes • Large turbine groups may have an adverse 'flattening' effect on small scale, more intricate landscapes where smaller groupings are likely to fit better • Large turbine groups may be appropriate in simple, flat coastal landscapes, and smaller turbines and groups may be more appropriate in more complex, varied coastlines • Development could affect perception of vertical scale if turbines are too tall in comparison with landscape features or smaller turbines
Openness	Extent of enclosure / containment due to the arrangement of landscape elements and the interaction of their height and distance between them	• Enclosed or confined landscapes generally have less capacity than more open landscapes • Sensitivity is likely to be increased where views are focussed along coastlines or across open water to other land masses
Experience	For example wildness, solitude, tranquillity, sense of movement, etc.	• Development could affect perceptions of remoteness, calmness etc.
Landscape Context	Consideration of how adjacent areas and features alter key sensitivities i.e. importance to setting or providing a backdrop	• Existing development in adjacent areas is taken into account in assessing existing 'baseline' character • Existing development in adjacent areas is taken into account in assessing whether an area has reached or is approaching landscape capacity for wind energy development • Development in one area can affect key sensitivities in adjacent areas and increase cumulative landscape effects • The setting of distinctive landmark coastal features can be especially sensitive

Appendix B: General Design Guidance Principles for Wind Energy and Ground Mounted Solar PV Development

Proposals for wind energy and ground mounted solar PV development in the borough should reflect differences between the landscape character areas (LCA) described in the 2016 Landscape Strategy by adhering to the design guidance provided for each LCA. Proposals for these types of development within Cheshire West and Chester borough should also follow a number of general design principles in order to minimise landscape impacts, as set out below:

Location

New wind energy and ground mounted solar PV development should:

- Relate to the scale of existing elements within the landscape;
- Be sensitively located and detailed to make a positive contribution to the character and appearance of an area, such that landscape character and local distinctiveness is conserved, restored or enhanced;
- Respond to the location and characteristics of the site by including details that incorporate, as far as possible, existing site levels, local topography, landscape features such as watercourses, hedgerows, trees, orchards and woodland, field patterns, buildings and landmarks. Alterations to these features should be minimised;
- Respond to the location by respecting, complimenting and retaining continuity with existing built form, pattern, scale, massing, height, density and materials. New development should not overshadow or otherwise threaten the setting of existing traditional buildings such as dairy barns;
- Respond to the location by respecting the setting of nationally designated heritage assets (buildings and features on Heritage England's National Heritage List for England) and other heritage assets of local significance;
- Be of high quality in terms of siting, layout and design to conserve, restore or enhance local distinctiveness and sense of place;
- Respond to the location by respecting and reflecting existing landscape setting. New development should be integrated into the landscape by careful siting, for example avoiding brows of hills and skylines;
- Maintain the distinction between rural and urban areas by incorporating sensitive location and design that does not lead to urbanising the countryside, for example by avoiding the insensitive design and accumulation of suburban style detailing such as fences, lighting etc.;
- Refer to Conservation Area appraisals, Village Design Statements, Neighbourhood Plans and other relevant local documents;
- Avoid (directly or adversely affecting the setting of) Areas of Special County Value (ASCV);
- Avoid areas identified as Key Settlement Gaps i.e. sensitive open areas between settlements where development could affect the sense of openness and lead to coalescence of settlement.

As well as considering the above factors, proposals for medium scale and larger scale wind energy development should only be located within an "area of least constraint" as identified in the Cheshire West & Chester Low Carbon and Renewable Energy Study, 2012.

Boundary Treatment

- New development proposals should include a clear description of how existing boundaries would be protected and retained, for example hedgerows and hedgerow trees;
- New development should take full account of its relationship with its surroundings and ensure that it is well integrated into the landscape. This may include strong woodland buffers, hedgerows and tree planting on the development boundary as appropriate to ensure development provides a green interface with the countryside;
- New buffer planting should complement the Mersey Forest and provide opportunities for recreation;
- Appropriate boundary treatments should be used around new development, for example native hedgerows or sandstone walls, to conserve, restore or enhance the local vernacular built style (close board fencing or other solid fencing is unlikely to be an appropriate boundary treatment along boundaries facing open countryside, public rights of way or public open spaces).

Views

- New development should respond to the location by taking full account of views into, out of and across the site. The siting and treatment of new development is particularly important where visible from important features and viewpoints such as hillforts, neighbouring properties, public areas such as roads and rights of way, and where visible from a wide area;
- Careful siting, layout and design could help reduce the visual impact of new development;
- New development should avoid prominent skyline locations such as ridgelines or brows of hills, or prominent slopes;
- Visual impact of intrusive or prominent built features can be reduced by appropriate native broadleaf planting to filter views or for screening solar farms, but inappropriate planting (for example conifers) can itself be prominent and uncharacteristic leading to adverse visual impact;
- New development should not block or obstruct views out, in particular sensitive views of landmark features (such as church spires and hillforts) or to distant hills (including the Clwydian Hills in north Wales , the Shropshire Hills or the Pennines) or the local sandstone ridge, as seen from highways, footpaths, bridleways, public open spaces or other public areas within the settlement;
- Lighting should be carefully selected to minimise glare and light pollution.

Landscape Conservation / Enhancement / Management

- Key landscape characteristics and features of a landscape character area should be retained and new development should contribute to the appropriate conservation and enhancement of these features and the public's enjoyment of them;
- Existing land use and management should continue beneath and around turbines and solar panels;

- New planting appropriate to a landscape character area should be considered to help screening and to sensitively incorporate new development into the landscape;
- Design layout should incorporate a high quality landscape framework that includes the establishment of green infrastructure such as linear buffer strips, creating a diverse network of informal open spaces and continuous wildlife corridors within and around the site;
- Existing hedgerows should be retained and restored, for example by gapping-up. Where opportunities exist, new hedgerows and hedgerow trees should be planted to restore former field patterns;
- Traditional agricultural field patterns and boundaries should be retained and managed where these are characteristic of the landscape;
- Areas and features of nature conservation value and interest should be retained and incorporated into new development, for example field ponds (a particular feature of the CWaC landscape) or areas of unimproved grassland/pasture. Where opportunities exist new areas and features should be created, for example by extending areas of semi-natural rough grassland, indigenous woodland or heathland habitat in areas where this would have no detriment to anything else (e.g. archaeological sites);
- Features of archaeological or historical significance, for example ridge and furrow, should be retained;
- New development should not affect the sense of tranquillity of an area where this is identified as a key characteristic.

Accessibility

- New development should reinforce or create a network of routes and allow for further connections. The connections may be selective, for example to allow for pedestrians, cyclists or equestrians but not vehicular movement;
- New development proposals should clearly show connections to or extending an existing movement network, vehicular or non-vehicular, in particular public rights of way.

Wind Turbine / Wind Farm Design

Guidance on the design of wind turbines and windfarms can be found in a number of documents[21] and from within the wind industry itself. Guidance varies depending on the size of turbines, their design and siting, and potential landscape and visual impacts. Micro wind turbines which are attached to buildings and vertical axis turbines (more often specially tailored to create a design statement for individual sites) are not considered in this study.

Smaller scale free-standing horizontal axis turbines between approximately 10m-30m in height (to blade tip) are commonly available in a variety of styles, designs and colours. Choice of turbine is a key factor in the potential landscape and visual suitability of small turbines at any site, especially where cumulative effects may occur (see below). Careful

[21] For example:
'Micro renewables and the natural heritage. Revised guidance' (2016), Scottish Natural Heritage
'Siting and Design of Small Scale Wind Turbines of between 15 and 50 metres in height' (2012), Scottish Natural Heritage;
'Siting and Designing Windfarms in the Landscape' (2009), Scottish Natural Heritage.

choice of turbine at an early stage in the design process will help to ensure an improved landscape fit and avoid complex visual mixes of turbine types in any location. Applicants are encouraged to consider and discuss a number of different turbine options at the pre-planning stage.

This scale of wind turbine can either be three bladed mounted on tubular masts/towers, or two bladed machines on lattice towers; their rotational movement is commonly perceived as being less smooth than 3 bladed models from some aspects, despite their movement being regular. This can be a particular consideration when 2 bladed turbines are viewed in combination with 3 bladed models.

Medium scale turbines between approximately 30m-80m in height have the same form as large commercial turbines, with three blades mounted on a solid tapering tower. They are most commonly a pale grey colour. Their blade movement, as with the smaller turbines, will be faster than larger models and therefore less 'restful' on the eye. They may be most appropriate in industrial settings or in rural locations where there are large scale modern agricultural buildings.

Some key considerations to development of single and smaller groups of up to 6 smaller and medium scale turbines are as follows (this list is not exhaustive and reference should be made to up to date guidance):

- The choice of turbine form and appearance should be most appropriate for the site, in terms of turbine number, blade number and movement, tower, colour and size/scale, in order to ensure a good landscape 'fit' taking into account key landscape and visual characteristics;
- A group of turbines should be arranged to relate well to, respect and compliment their setting, taking into account the most sensitive or significant views from where the turbines will be seen;
- Ancillary infrastructure such as tracks, buildings, walls and fences should be appropriate in their scale, materials and the character of the landscape. Existing infrastructure should be used where possible to minimise landscape and visual impact;
- Local landform and landscape features should be utilised to limit visibility of the proposal;
- Layout of turbines within a cluster/group should reflect and complement existing landform patterns and scale (refer to guidance on cumulative effects below).

Larger turbines between 80m-130m in height to blade tip (though larger turbines are available) generally appear out of scale and visually dominant in lowland, settled, or smaller-scale landscapes, which are often characterised by the relatively 'human scale' of buildings and features. They are best suited to more extensive, open areas, and set well back from more sensitive ridges and fringes. This can reduce effects on settled and smaller-scale valleys and lowland landscapes.

Key considerations specific to development of single larger turbines and groups of larger commercial scale turbines are as follows (this list is not exhaustive and reference should be made to up to date guidance):

- The proportion of blade length to tower height, and overall height to blade tip can significantly affect the appearance of a turbine in the landscape;
- A single colour of turbine is generally preferable, avoiding graded colours at the base; a light grey colour generally achieves the best balance between reducing visibility and visual impacts when seen against the sky (although this works less well when viewed against a darker background);
- Paint reflection should be minimised by using matt or light-absorbent finishes;
- Features in the landscape act as scale indicators that can accentuate the scale of larger turbines;
- The presence of other large structures in the landscape can reduce sensitivity to large turbines, however wind turbines and associated infrastructure can create an over-complex visual image in association with other large infrastructure such as electricity pylons and transmission lines;
- In general, the fewer turbines and the simpler the layout on an even landform, the easier it is to create a positive feature - visually balanced, simple and consistent in image as it is viewed from various directions. This is most easily achieved by a simple line upon level ground;
- A regular shape, such as a double line, a triangle, or a grid can appear appropriate within a wide open and level space where there is a regular landscape pattern, such as within large scale agricultural fields. However, as you move through the landscape and see it from different directions and elevations, views of the grid change and reveal a variable effect;
- Irregular layouts can be more appropriate in landscapes of variable elevation and pattern. However, irregular forms pose a greater challenge in terms of achieving a simple image, as the turbines will interact in varying ways with each other as well as with the underlying landscape;
- The siting and design of large turbines should take into consideration existing focal features in the landscape, such as ridges and hillforts, in order to minimise visual conflicts and avoid compromising the value of existing foci;
- In some urban fringe landscapes, larger turbines with slower rotation of blades may be preferable to smaller turbines with faster speeds. However, there will always be a need to relate the size of the turbines to the local context, taking account of the existing buildings and foci.

Cumulative Effects

The combined effects of a number of wind turbines or solar arrays can create cumulative effects i.e. additional changes to the landscape and people's perceptions of it that could eventually change the character of the landscape. Currently there are few wind turbines or solar farms in CWaC but the potentially high level of visibility and other potential impacts as the numbers increase means that cumulative effects are more likely. This is an evolving area of practice and considerable effort has recently been devoted to addressing cumulative landscape and visual effects in guidance, specifically on wind farms[22]. More general

[22] Assessing the Cumulative Impact of On Shore Wind Energy Developments (2012), Scottish Natural Heritage

guidance is provided in the 'Guidelines for Landscape and Visual Impact Assessment', 2013[23].

New development proposals should take into account the additional changes to landscape and visual amenity caused by the proposed development in conjunction with other similar existing developments (either built or under construction) and those approved (but not built) and those at application stage, and the combined effect.

Landscape and visual impact assessment of new development proposals should include assessment of cumulative landscape and visual effects that can have an impact particularly on the following:

- The physical fabric of the landscape, such as hedgerows and woodland;
- Landscape character, where effects may combine to such an extent that they create a different landscape character type dominated by the developments. Such change need not be adverse; some degraded or derelict landscapes could be enhanced as a result of such change in landscape character;
- Landscapes recognised as having a particular value or function, such as Areas of Special County Value (ASCV)and Key Settlement Gaps, for example;
- Views, including combined visibility of two or more developments from a viewpoint, either "in-combination" (where the developments are seen within the same arc of vision at the same time) or "in-succession" (where the observer has to turn to see the various developments). The assessment should define the area within which the cumulative effects will be visible;
- Views, including sequential visibility where different developments are seen by moving from one viewpoint to another, for example when traveling along a road, railway, river/canal or footpath, etc. The assessment should define the length of each route along which there will be cumulative sequential effects.

Cumulative Effects Specific to Wind Energy Development

Key considerations when proposing wind energy development in addition to existing turbines are as follows (this list is not exhaustive and reference should be made to up to date guidance):

- Differing blade movement speeds should be minimised;
- Turbine form, colour and scale in terms of ratio of tower height to rotor blade diameter, and overall height and appearance should be similar to avoid local landscape 'clutter';
- Development pattern should result in a similarity of design and visually balanced and coherent image within an area that limits visual confusion;
- To achieve simple visual relationship with the skyline, avoiding variable height, spacing and overlapping ('stacking') of turbines.

[23] Guidelines for Landscape and Visual Impact Assessment, Third Edition, 2013; Landscape Institute and Institute for Environmental Management and Assessment.

Appendix C: Checklist for Applicants

The borough council promotes an iterative 'landscape-led' approach to development proposals and planning applications within Cheshire West and Chester. The following points should be addressed to show how landscape character has been taken into account during the development of proposals for renewable wind and solar PV energy generation, and that potential landscape and visual impacts of a proposed development have been fully addressed:

Landscape Sensitivity

- Which landscape character type and landscape character area is the proposed development in (refer to the 2016 Landscape Strategy and Figure 2 below)?

- How have the key characteristics, criteria and sensitivity attributes been taken into account in the siting, layout and design of proposed wind energy development (refer to the relevant assessment of LCT sensitivity to wind in section 4 and the LCA matrix in Supporting Technical Appendix on Sensitivity to Wind Energy development)?

- How have the key characteristics, criteria and sensitivity attributes been taken into account in the siting, layout and design of proposed solar energy development (refer to the relevant assessment of LCT sensitivity to solar development in section 5 and the relevant LCA matrix in Supporting Technical Appendix on Sensitivity to Solar PV Development)?

- For medium scale (30m-80m height to blade tip) and large scale (80m-130m+ height to blade tip) wind energy development, does the proposal lie within an "area of least constraint" (refer to the 2012 'Low Carbon and Renewable Energy Study' and Figure 1)? If not, what considerations have been addressed in deciding that a location beyond an area of least constraint is suitable for medium or large scale wind energy development?

- Does the proposal lie within an Area of Special County Value (ASCV)? If so, what considerations have been addressed in deciding that a location within an ASCV is suitable for wind energy or solar PV development?

- Does the proposal lie within an area identified as a Key Settlement Gap? If so, what considerations have been addressed in deciding that a location within an open gap between settlements is suitable for wind energy or solar PV development?

- Does the proposal lie within the Green Belt? National planning policy makes it clear that renewable energy development is not normally considered appropriate development for Green Belt land. Developers will need to demonstrate very special circumstances if projects are to proceed within the Green Belt (see paragraph 2.5);

- How does the proposed development support the overall landscape management strategy for the landscape character area (refer to the 2016 Landscape Strategy)?

- How have the landscape management guidelines and built development guidelines been taken into account in the siting, layout and design of the proposed development (refer to the 2016 Landscape Strategy)?

Landscape and Visual Impact Assessment

- Is the application supported by a Landscape and Visual Impact Assessment (LVIA) (where part of a formal Environmental Statement in accordance with UK Environmental Impact Assessment Regulations) or a landscape appraisal (where statutory EIA is not required)? LVIA or appraisal (for example as part of the Design and Access Statement) is always required when adverse effects are likely on landscape features, landscape character, townscape character and views.

- Has the LVIA / appraisal been completed in accordance with up to date good practice guidance such as the *Guidelines for Landscape and Visual Impact Assessment* (GLVIA) 3rd Edition, 2013 (prepared by the Landscape Institute and the Institute of Environmental Management and Assessment)?

- Has the LVIA / appraisal been completed in accordance with specific guidance on a particular type of development, such as the following wind farm guidance produced by Scottish Natural Heritage (SNH):
  - *Siting and Design of Small Scale Wind Turbines of between 15 and 50m in Height*, 2012;
  - *Assessing the Cumulative Impact of On Shore Wind Energy Developments*, 2012;
  - *Siting and Designing Wind Farms in the Landscape*, Version 2, 2014;
  - *Visual Representation of Wind Farms Good Practice Guidance*, version 2, 2014.

- The scope and methodology of the LVIA / appraisal should be agreed with the council at the outset of the assessment, including relevant baseline studies, the study area and visual envelope / Zone of Theoretical Visibility (ZTV).

- Does the LVIA / appraisal clearly identify the landscape receptors (landscape elements / features / character) and visual receptors (groups of people, key views and viewpoints) likely to be affected by the proposed development? These should be agreed with the council at the outset of the assessment.

- Does the LVIA / appraisal clearly identify the separate landscape effects and visual effects of the proposed development, including cumulative landscape and visual effects, and any mitigation measures?

Landscape Maintenance and Management

- Is the application supported by details of the objective(s) of new planting proposals (for example screening, landscape integration, nature conservation) and how such planting will be maintained in the future to meet the objective(s) e.g. how woodland planting would be maintained to create a screen or to ensure a diverse species and canopy structure?

- Is the application supported by a landscape management plan detailing the management proposals for planting and other features of the landscape such as field ponds where these are included within new development?

Other Supporting Documentation

As well as the above, all landscape related applications should include the following:

- Illustrative material including photographs of existing views taken from agreed viewpoints, photomontages to give an accurate impression of the development in the landscape from each viewpoint (in accordance with the Landscape Institute's Advice Note on *Photography and Photomontage*, and SNHs *Visual Representation of Wind Farms Good Practice Guidance*, Version 2, 2014), and cross sections;
- Development Parameters Plan;
- Supporting landscape strategy;
- Landscape Layout Plan at 1:200 scale;
- Proposed Mitigation and Management Plan;
- Hard and soft landscape specifications;
- Levels – existing and proposed;
- Boundary treatments;
- Information on access;
- Built form – in keeping with local character and distinctiveness.

Figure 1: Commercial scale wind energy "areas of least constraint" (from Cheshire West & Chester Low Carbon and Renewable Energy Study, 2012)

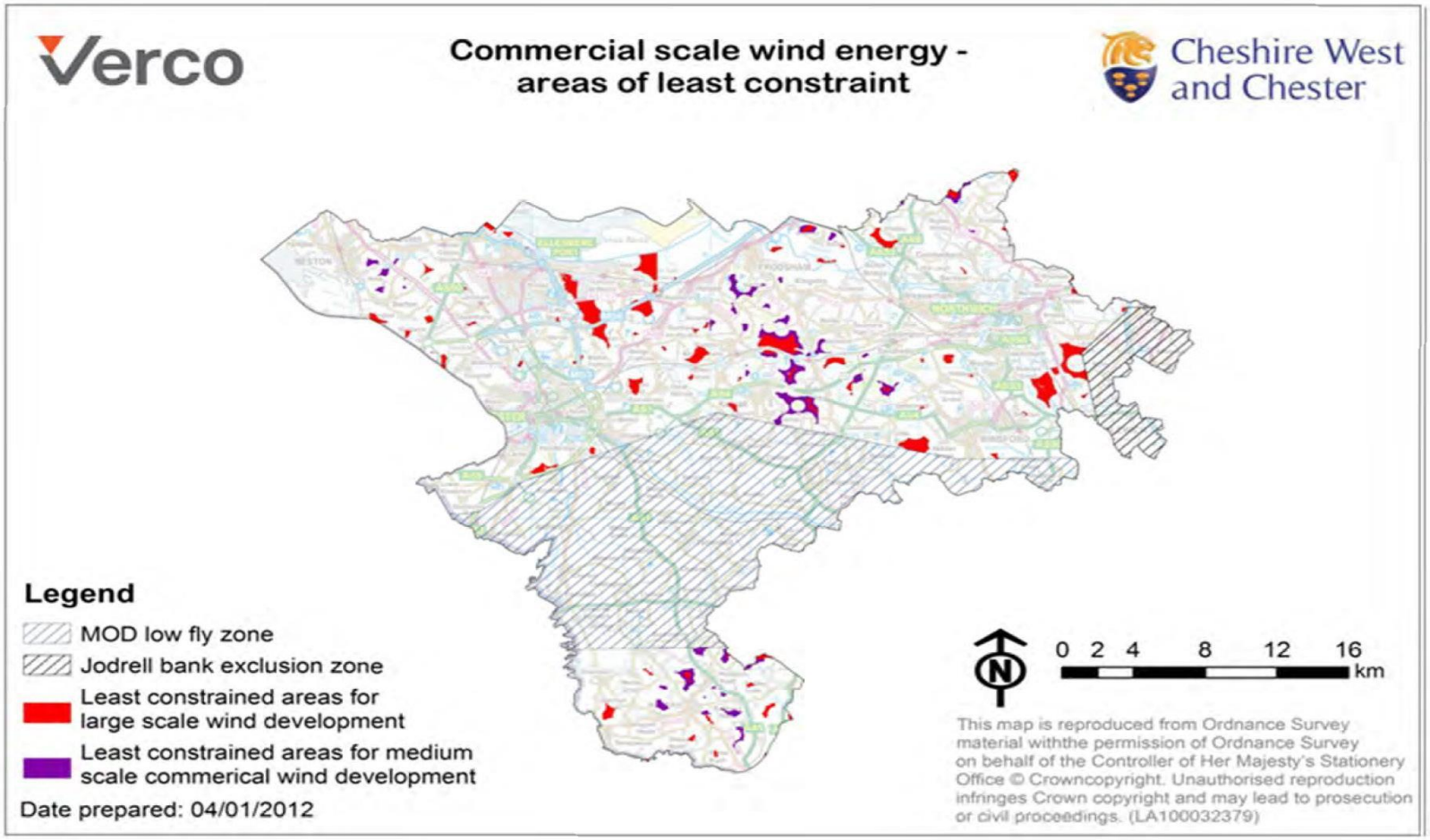


Figure 5-6: Areas of least constraint for commercial wind development

Figure 2: Landscape Character Types and Areas within CWaC (from 2016 Landscape Strategy, Figure 1)

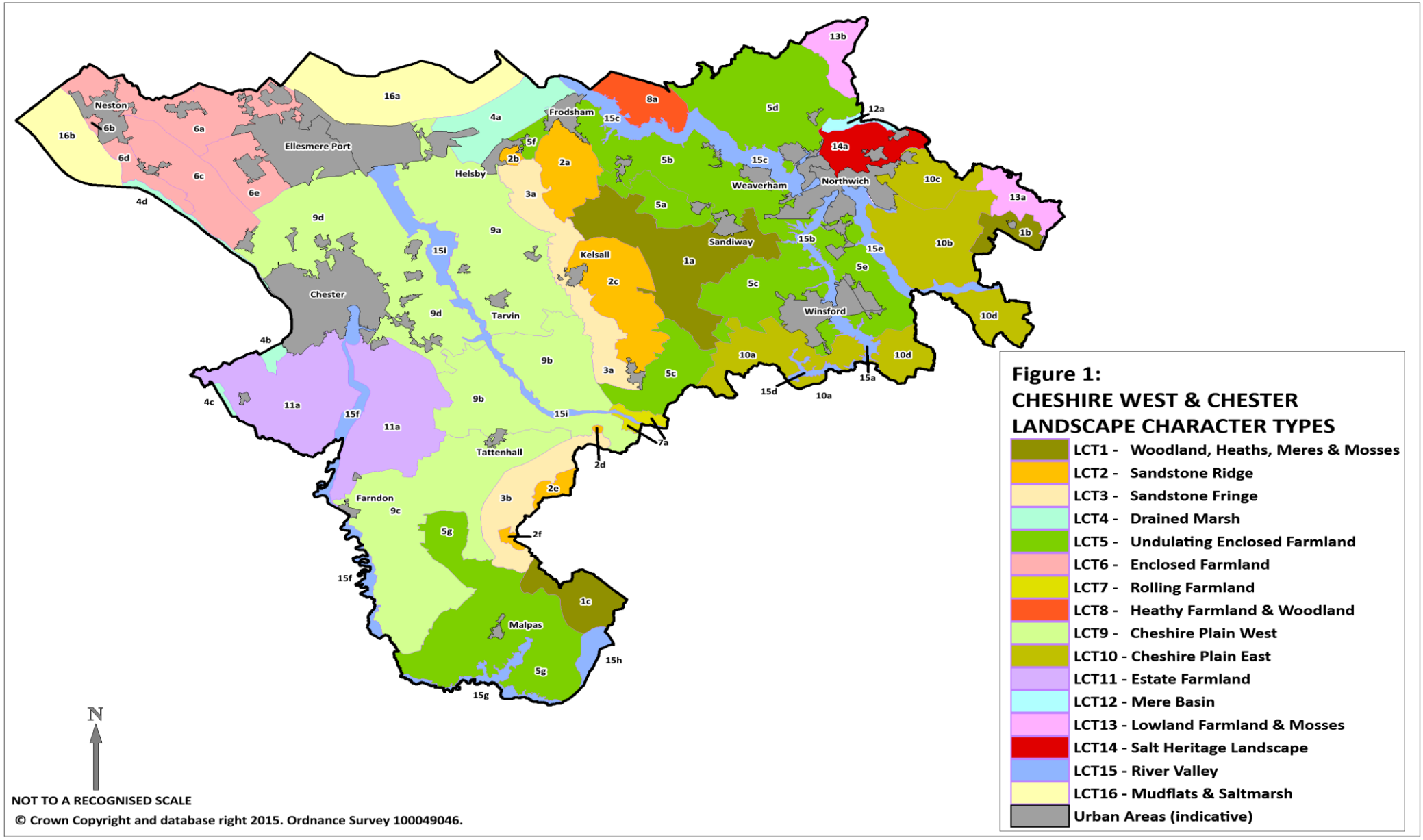


Figure 3: Landscape Sensitivity to Smaller Turbines

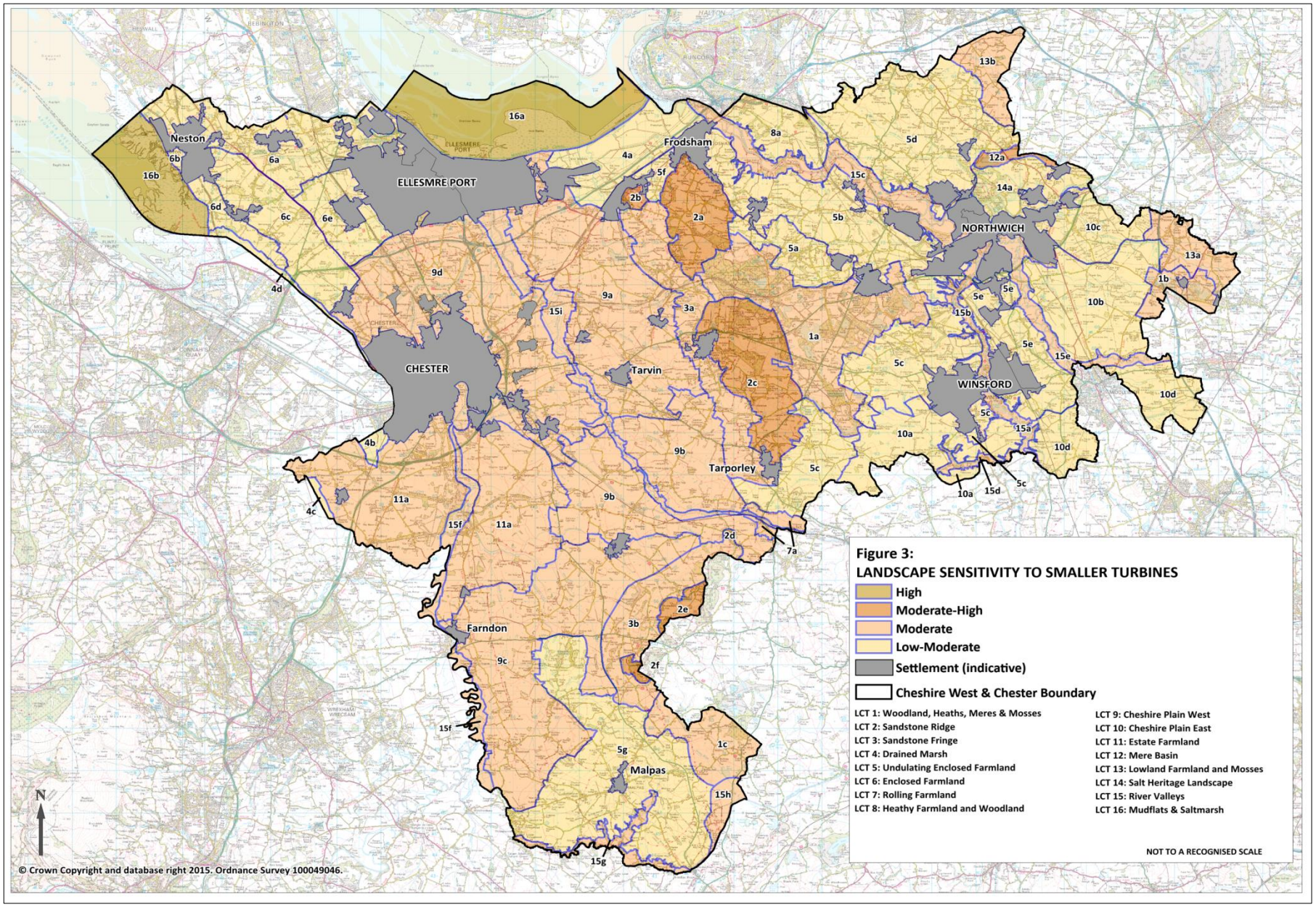


Figure 4: Landscape Sensitivity to Medium Turbines

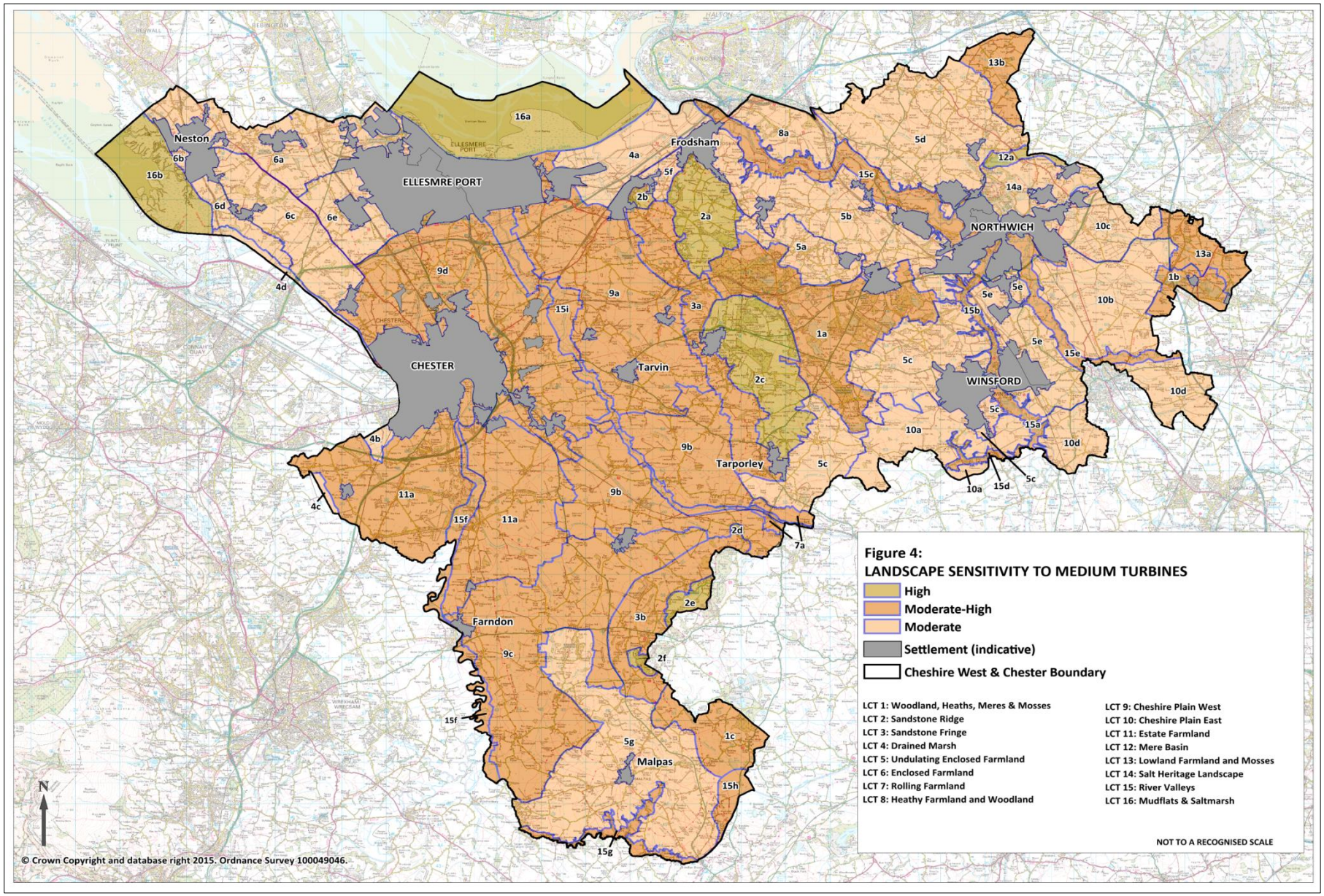


Figure 5: Landscape Sensitivity to Larger Turbines

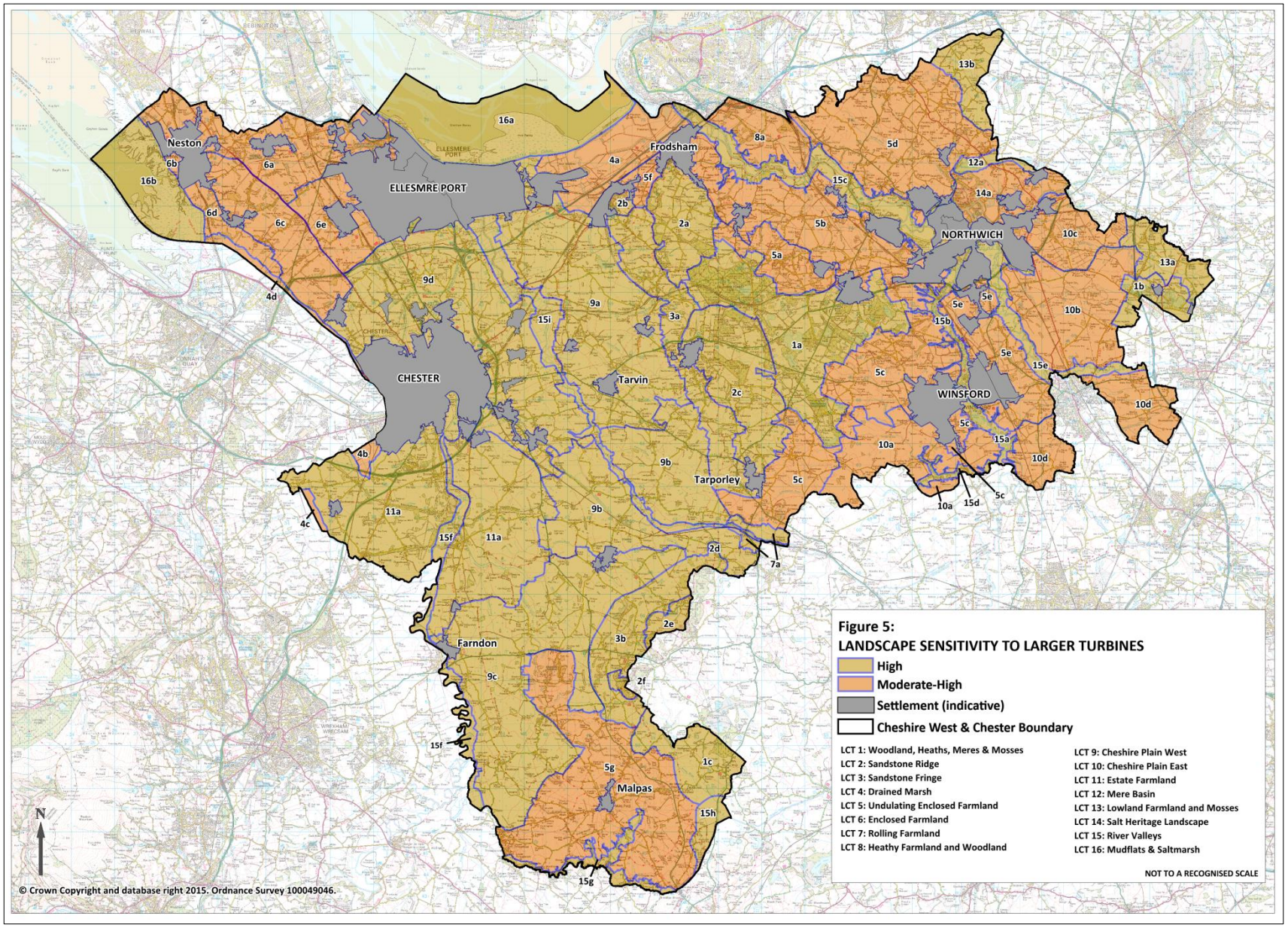


Figure 6: Landscape Sensitivity to Very Small Solar Farms

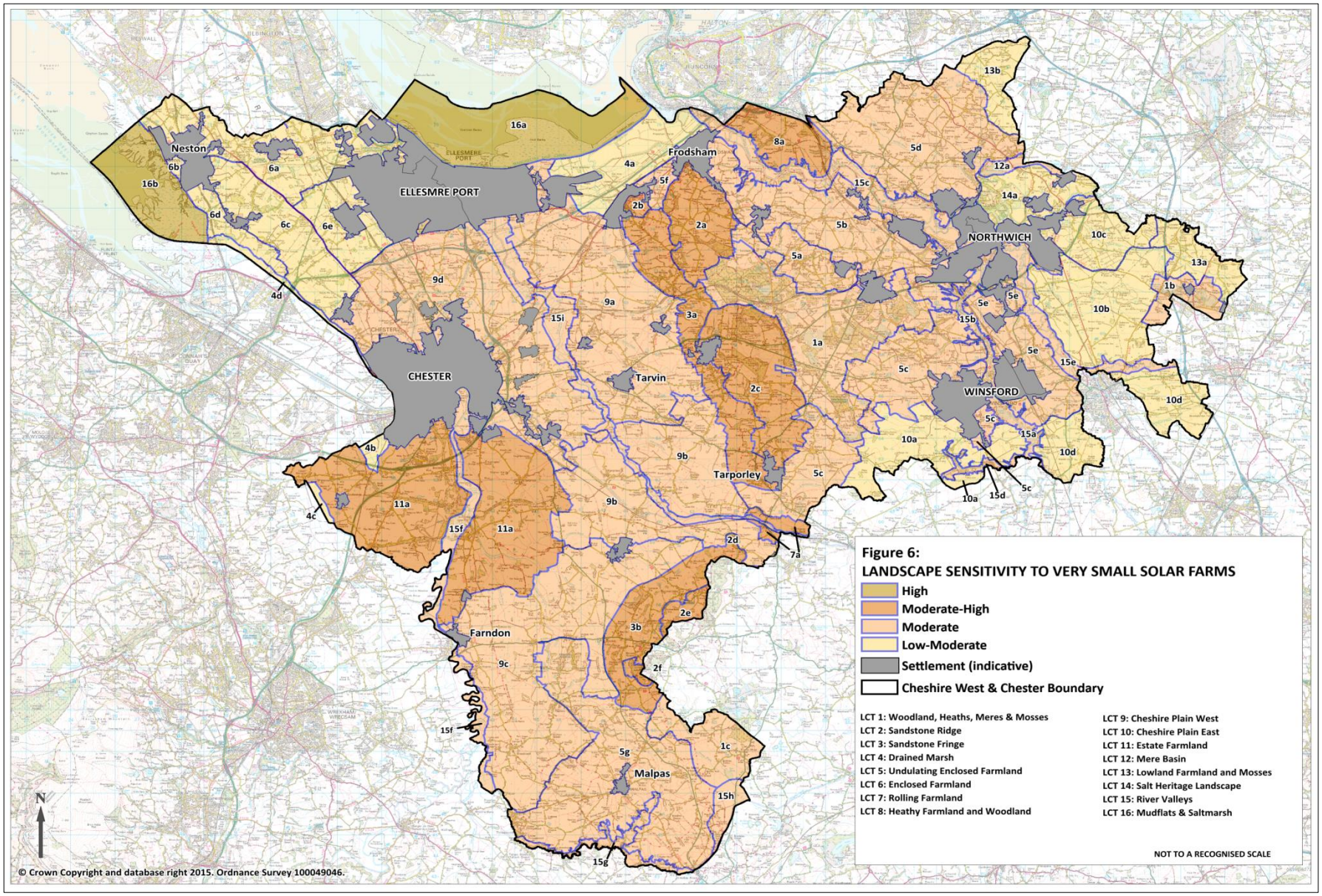


Figure 7: Landscape Sensitivity to Small Solar Farms

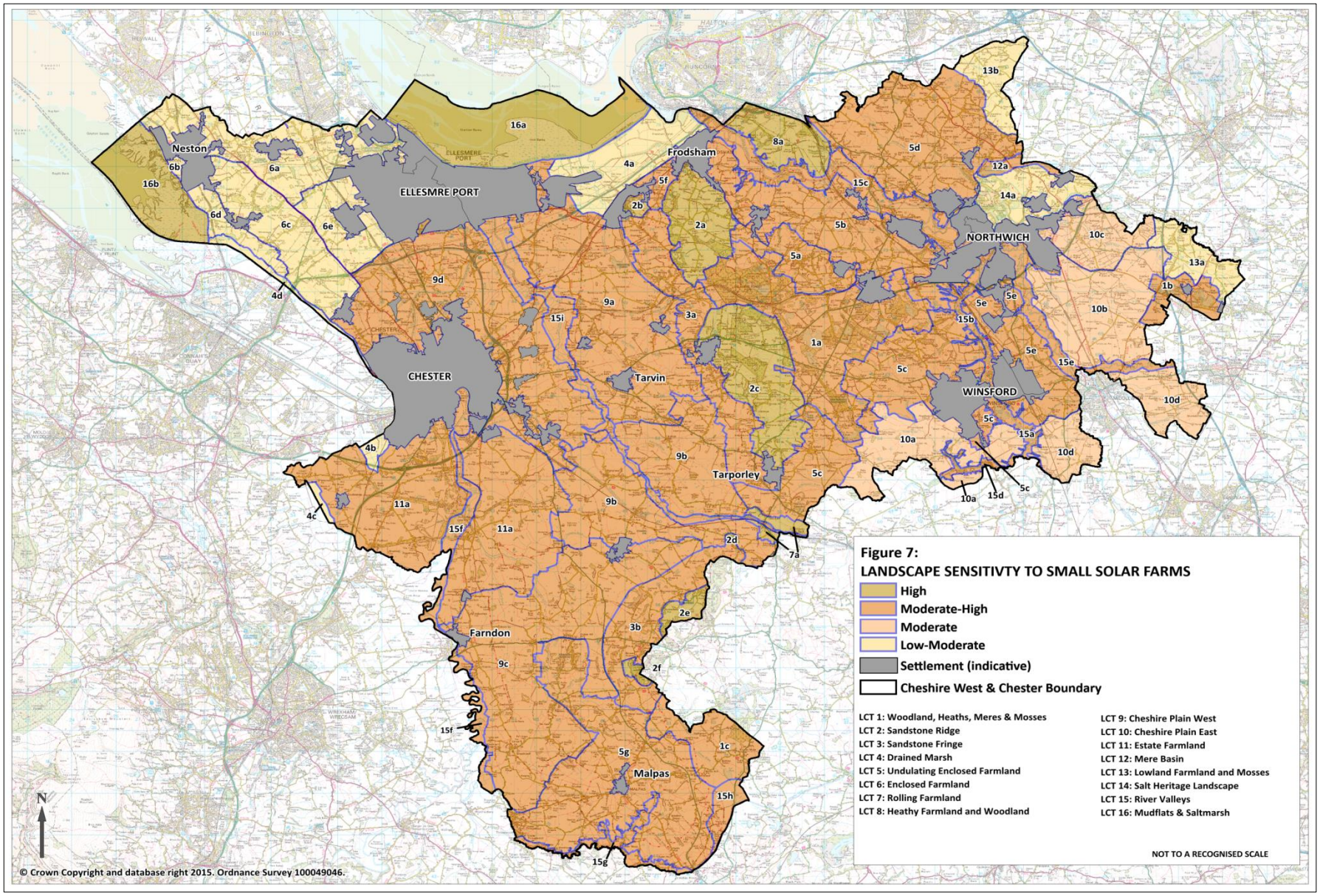


Figure 8: Landscape Sensitivity to Medium Solar Farms

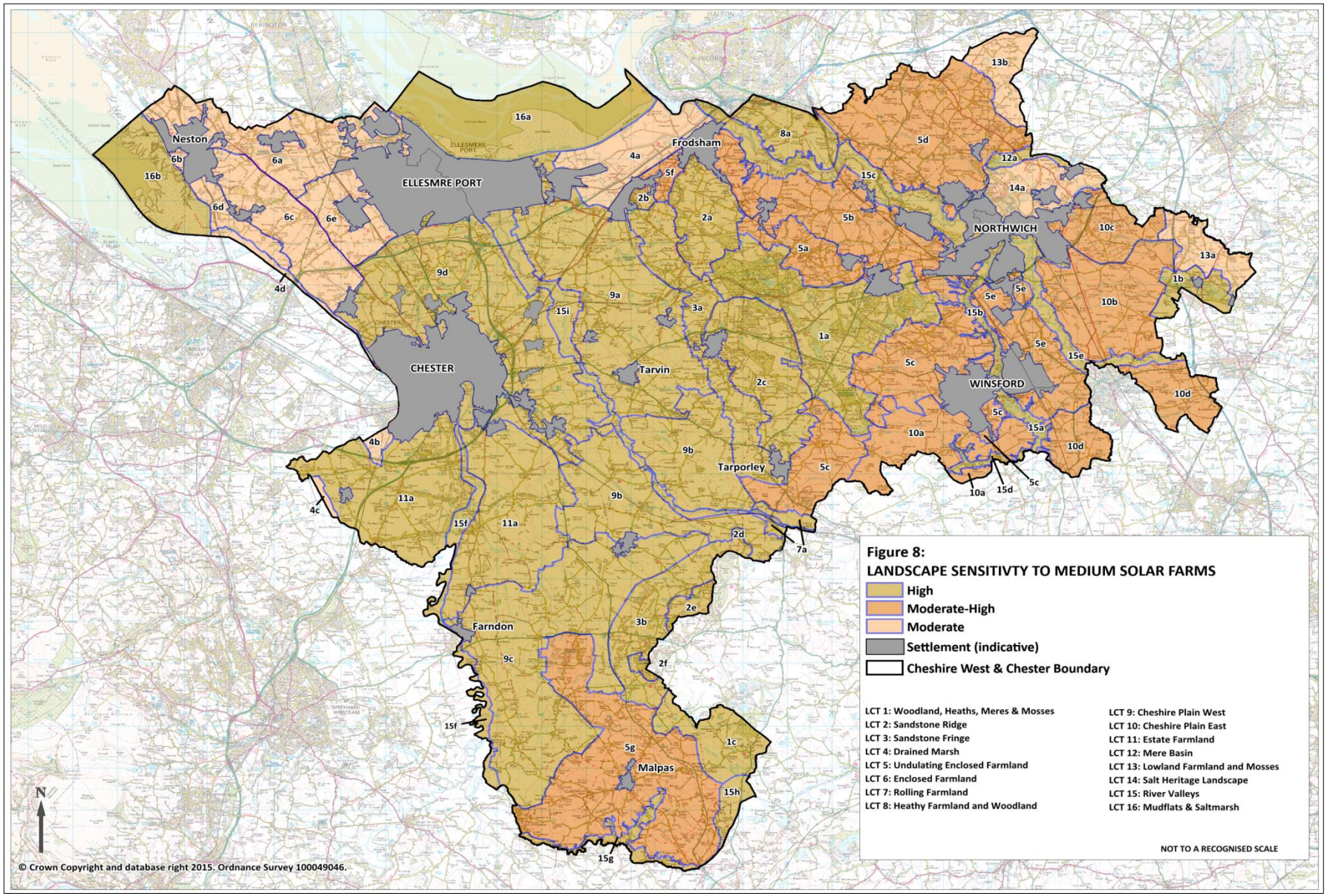


Figure 9: Landscape Sensitivity to Large Solar Farms

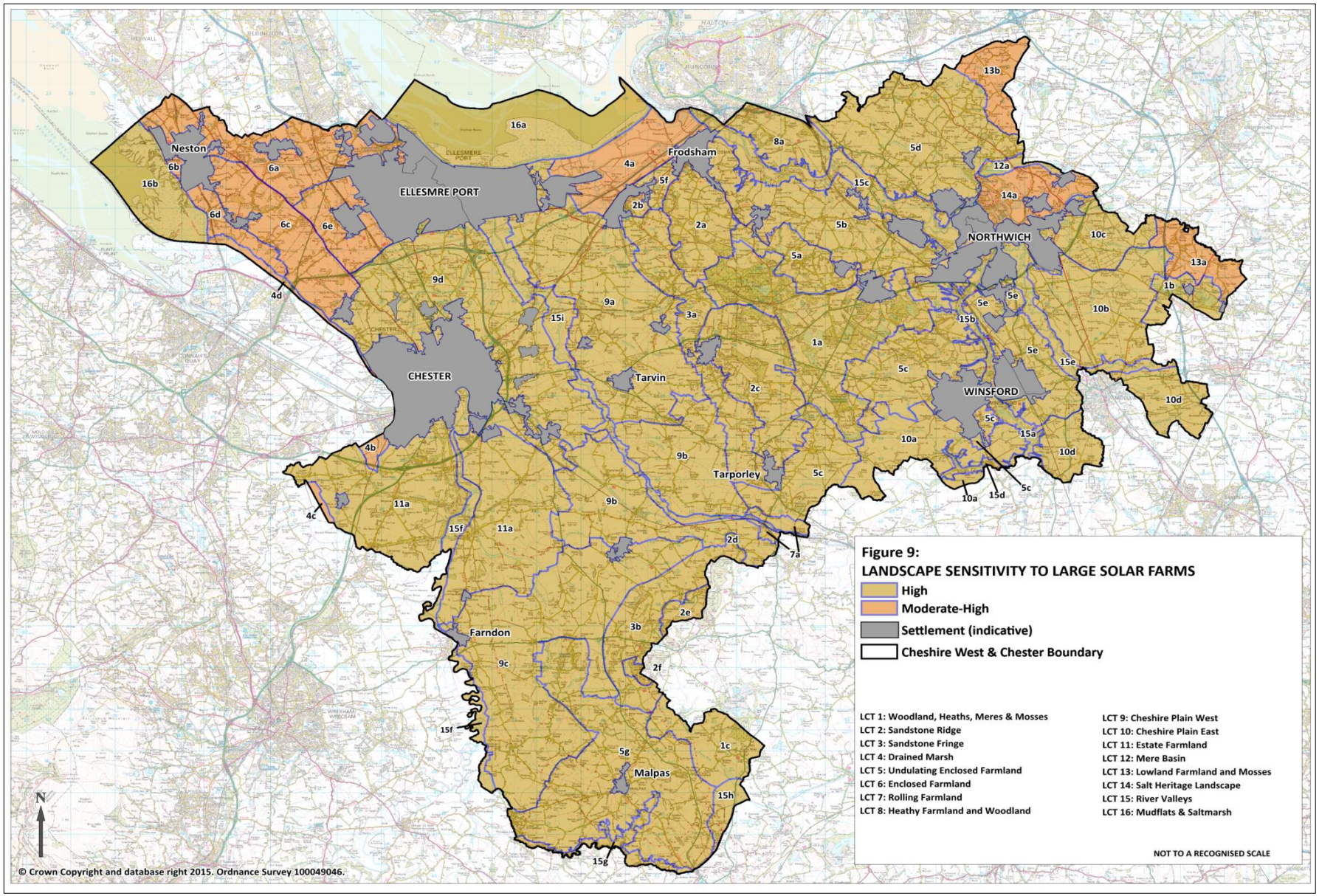


Figure 10: Landscape Sensitivity to Very Large Solar Farms