



# Wind energy development in the South Pennines landscape

# Programme for today

- **Background**
  - Policy context
  - South Pennines landscape
  - Impacts of wind energy development
- **The South Pennines Wind Energy Landscape Capacity Study**
  - Scope and content
  - Key principles
  - How to use the study
- **Exercise**
  - Assessing landscape issues
  - Report back
- **Discussion and close**



Background

# Why wind energy development must be accommodated

- UK has signed EU **Renewable Energy Directive**
- Target of 15% of energy (30% of electricity) from renewables by 2020 (7 x increase relative to 2008)
- Most challenging target of any Member State
- UK **Renewable Energy Strategy (RES)**
- Planning seen as having a key role in delivery
- Targets to cascade from national to local level
- Effective and proactive strategic planning seen as essential

# Consenting wind energy development

## Over 50MW

- Determined by Infrastructure Planning Commission (after Localism Bill by SoS for Energy and Climate Change/ Major Infrastructure Planning Unit)
- Determined in accordance with National Policy Statements for Energy (EN-1 and EN-3)
- IPC can take account of other matters it considers relevant, including Local Development Framework

## Under 50MW

- Determined by local planning authority in accordance with LDF

# National planning policy context for wind energy development

- PPS1 Supplement: Planning and Climate Change para 19:
  - Planning authorities should provide a framework that promotes and encourages renewable and low carbon energy generation
  - Policies should encourage and not restrict such development
- PPS22: Renewable Energy key principle 1(i):
  - Renewable energy developments should be capable of being accommodated throughout England in locations where the technology is viable and environmental, economic and social impacts can be addressed satisfactorily

# How landscape issues are dealt with in national policy (1)

- PPS1: Delivering Sustainable Development para 17:
  - Planning policies should seek to protect and enhance the quality, character and amenity value of the countryside and urban areas...
  - The highest level of protection should be given to most valued townscapes and landscapes (ie National Parks and Areas of Outstanding Natural Beauty)
- PPS7: Sustainable Development key principle 1(iv):
  - Development should be... in keeping and in scale with its location and sensitive to the character of the countryside and local distinctiveness

# How landscape issues are dealt with in national policy (2)

PPS22: Renewable Energy (and its Companion Guide):

- Landscape is a material consideration
- Consider landscape character (impacts on landscape vary depending on type of landscape)
- Identify sensitivity/capacity of landscape character areas to wind energy development
- Use this as part of the LDF evidence base
- Outside nationally designated landscapes, character is the key test of acceptability in landscape terms

# Process

Landscape character assessment



Landscape sensitivity and capacity assessment



LDF evidence base

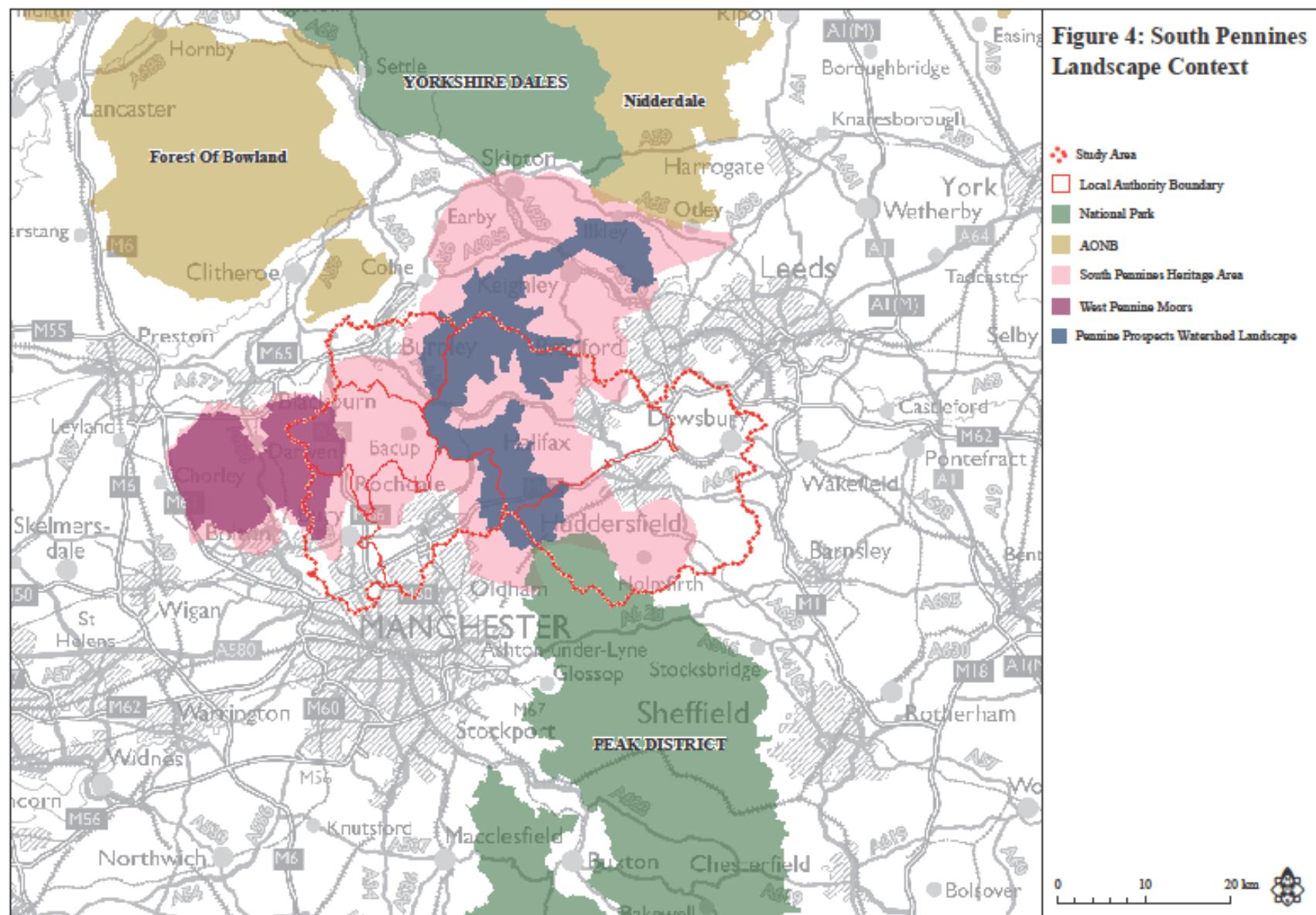


Material consideration

# The South Pennines landscape

- Only undesignated upland landscape in England (although nearly became an AONB)
- Strategic location in relation to existing designated landscapes and urban conurbations
- Nationally and internationally important for its habitats and as seat of industrial revolution
- Complicated administratively - many different local authorities and two government regions

**Figure 4: South Pennines Landscape Context**



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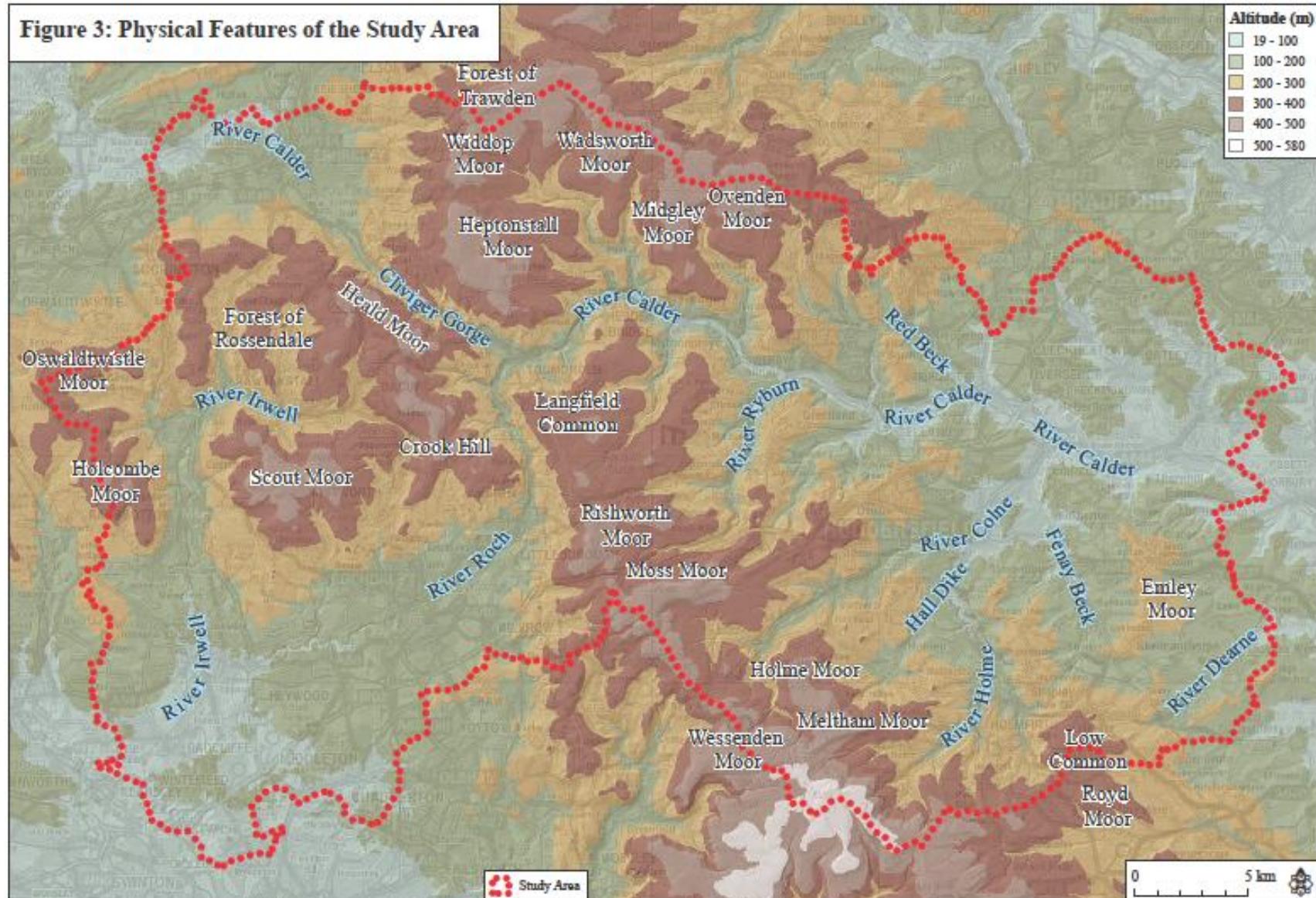
# Special qualities of the South Pennines landscape



# Wind energy development in the South Pennines

- Existing wind farms: Ovenden Moor, Coal Clough, Hameldon Hill, Scout Moor
- Consented wind farms: Crook Hill, Reaps Moss
- Applications: Todmorden Moor, re-powering of Coal Clough and Ovenden Moor...
- Others on edge of area, notably near Barnsley
- Many smaller applications

**Figure 3: Physical Features of the Study Area**



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# Issues

- Considerable development pressure:
  - relatively high wind speeds
  - no statutorily designated landscapes
- Open, exposed character and wide intervisibility across plateau tops
- Many people affected due to close juxtaposition with large populations in settled valley
- Concerns re:
  - Industrialisation of open moor
  - Scale and character of new structures
  - Visual clutter from associated infrastructure
  - Loss of wild character of open access land
  - Impacts on Pennine Way and Pennine Bridleway National Trails

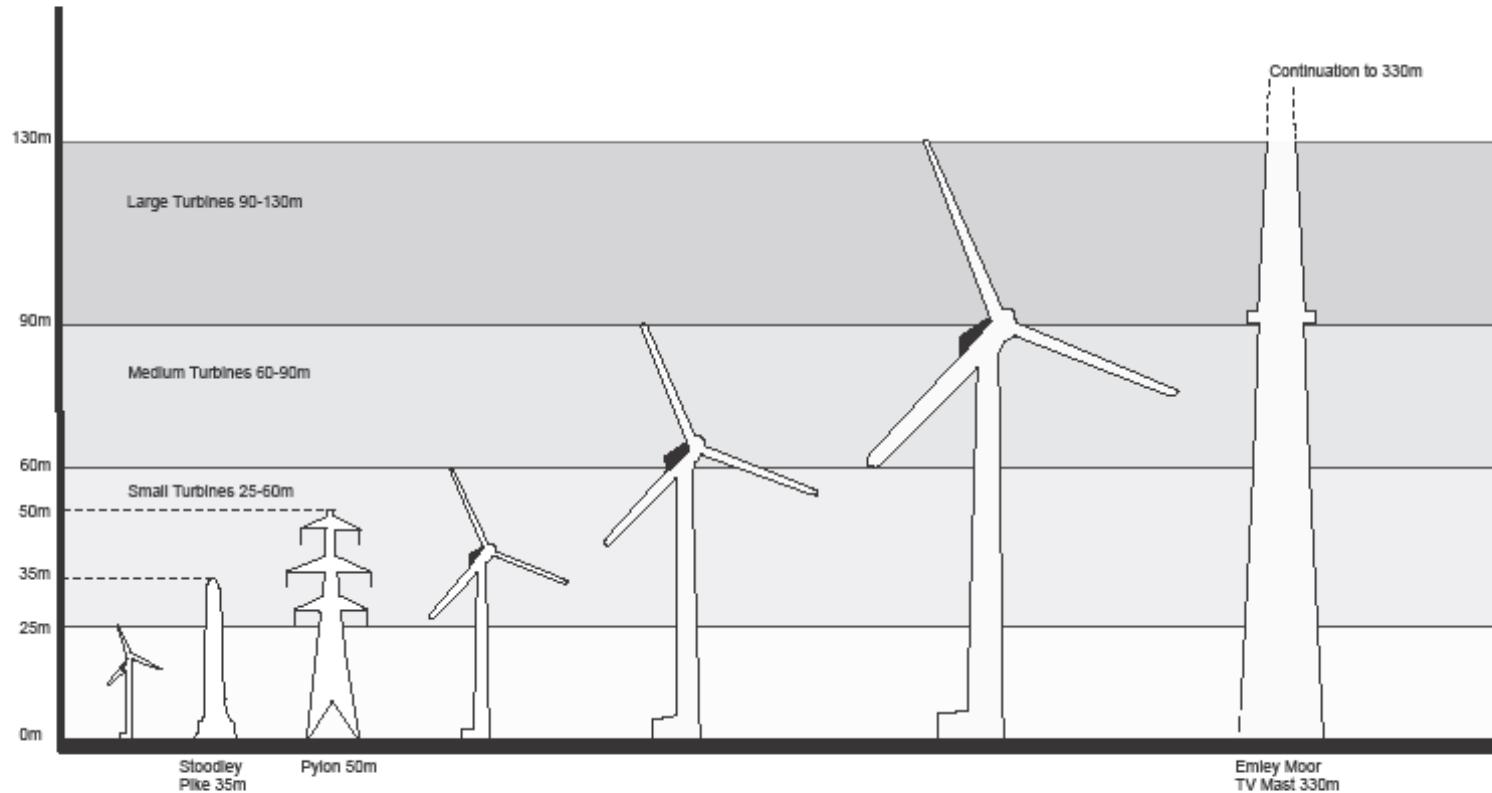
# Project elements giving rise to impact

- Turbines
- Also
  - Monitoring masts
  - Construction compounds and hardstanding
  - Access tracks
  - Substations
  - Grid connections

# Turbine sizes

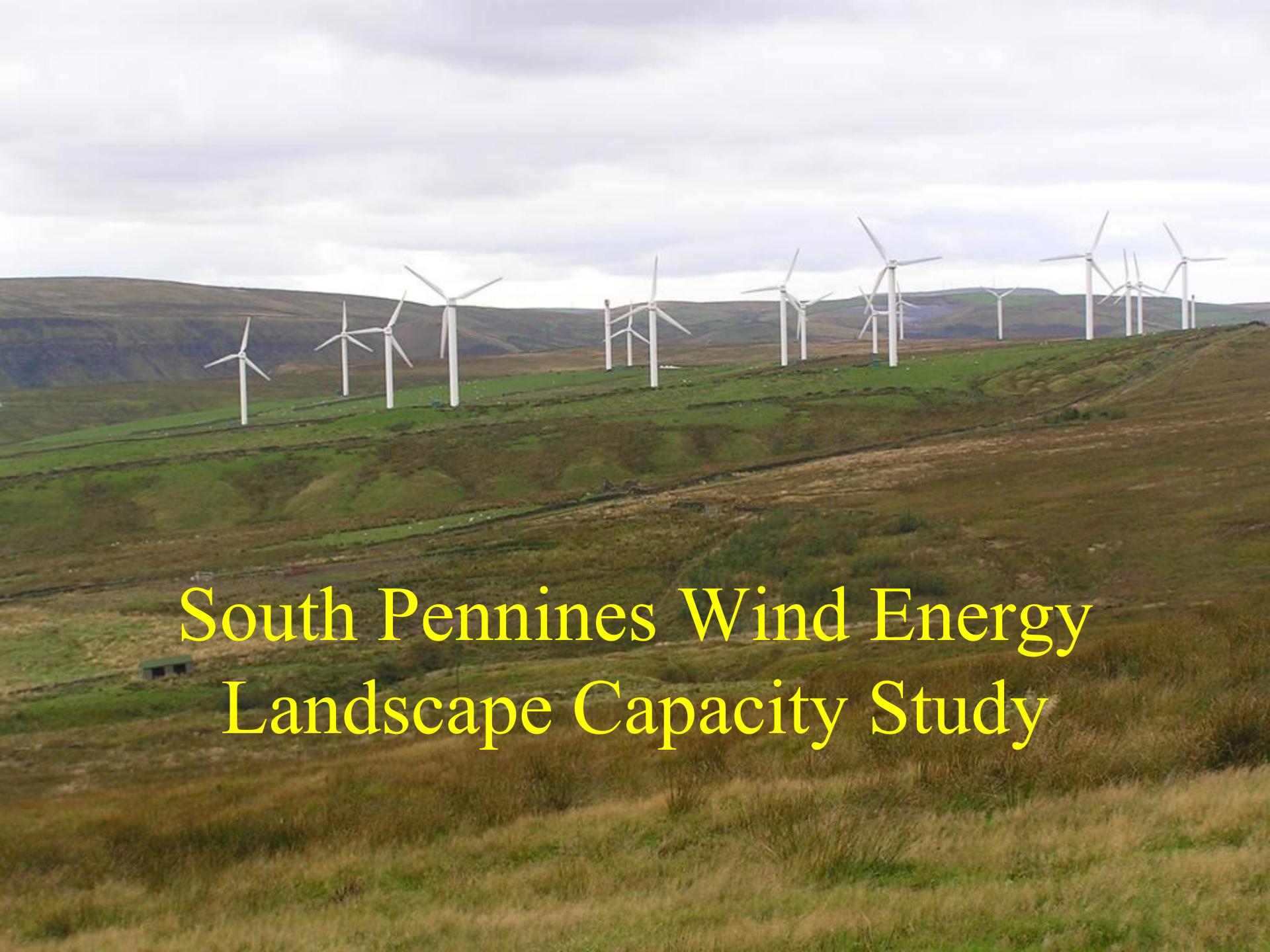
**Figure 2: Comparative Turbine Heights**

1:1250 @ A4



# Types of impact

- **Landscape impacts**
  - Effects on character (distinct and recognisable pattern of elements)
  - Effects on fabric (eg loss of characteristic elements)
  - Effects on landscape values (eg wildness)
- **Visual impacts**
  - Changes in appearance or perceptions of residents, travellers and recreational visitors
- **Cumulative impacts**
  - Combined impacts resulting from more than one project



# South Pennines Wind Energy Landscape Capacity Study

# Objectives

- Strategic scale
- Identify broad areas of opportunity (subject to detailed appraisal)
- Identify broad areas of constraint
- Identify cumulative and cross-boundary issues
- In doing the above, assist LPAs with:
  - LDF preparation
  - scoping opinions
  - assessments for specific development proposals

# Purposes and role (1)

- *It is of key importance that wind energy development in the South Pennines should, as far as possible, be developed in harmony with the surrounding landscape and the needs of other users of the landscape resource, and in a way that is consistent across local authority boundaries. This requires consistent, transparent and robust background information on landscape sensitivity to and capacity for wind energy development to inform the preparation of Local Development Frameworks, provide siting and design advice to intending wind energy developers, and guide planning decisions on wind energy development applications in the six local planning authority areas.*
- *This report, which will be referenced in the Core Strategies for each of the six authorities, is intended to meet these requirements, indicating the landscape and visual criteria against which wind energy developments will be assessed. Site identification, design and planning decisions for wind energy development will be informed by the material presented in this report.*

# Purposes and role (2)

- *In making decisions on future wind energy development, it is critical that wind energy developers as well as the local planning authorities and the new Infrastructure Planning Commission should recognise and respect the distinctive character, importance and values attached to the South Pennines landscape. These factors should be given due consideration and appropriate weight in the planning balance when determining applications for new wind energy development.*
- *Given that the area straddles Lancashire, Greater Manchester and West Yorkshire as well as two government regions, it is also vital that decisions on specific wind energy applications should be taken in a holistic manner, acknowledging the effects on the wider landscape of the South Pennines (and beyond) as well as on the local area. A key purpose of this study is to help promote a common understanding of and approach to wind energy development in the landscape across the South Pennines.*

# Content of study

Landscape character types



Landscape sensitivity assessment

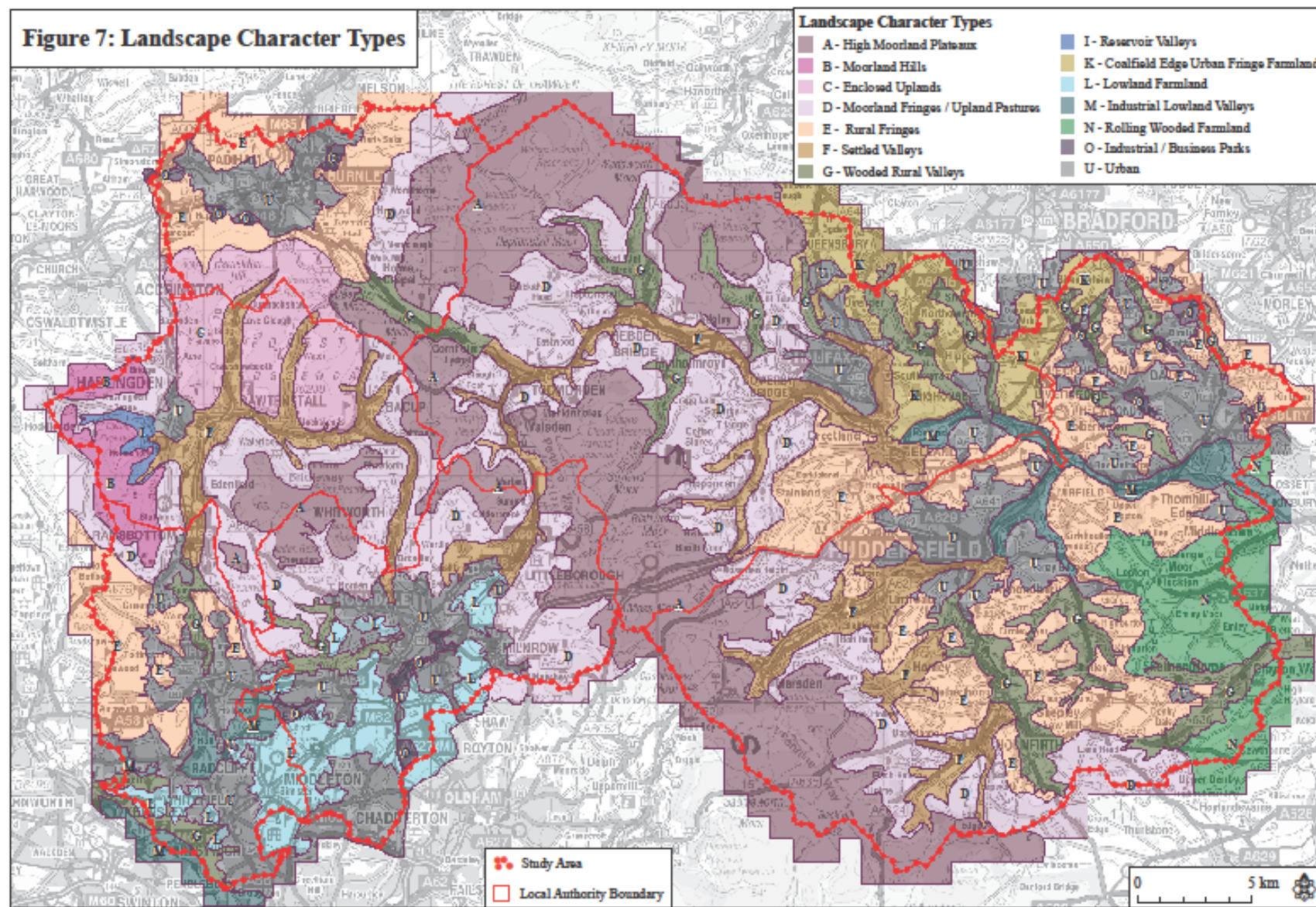


Landscape capacity assessment



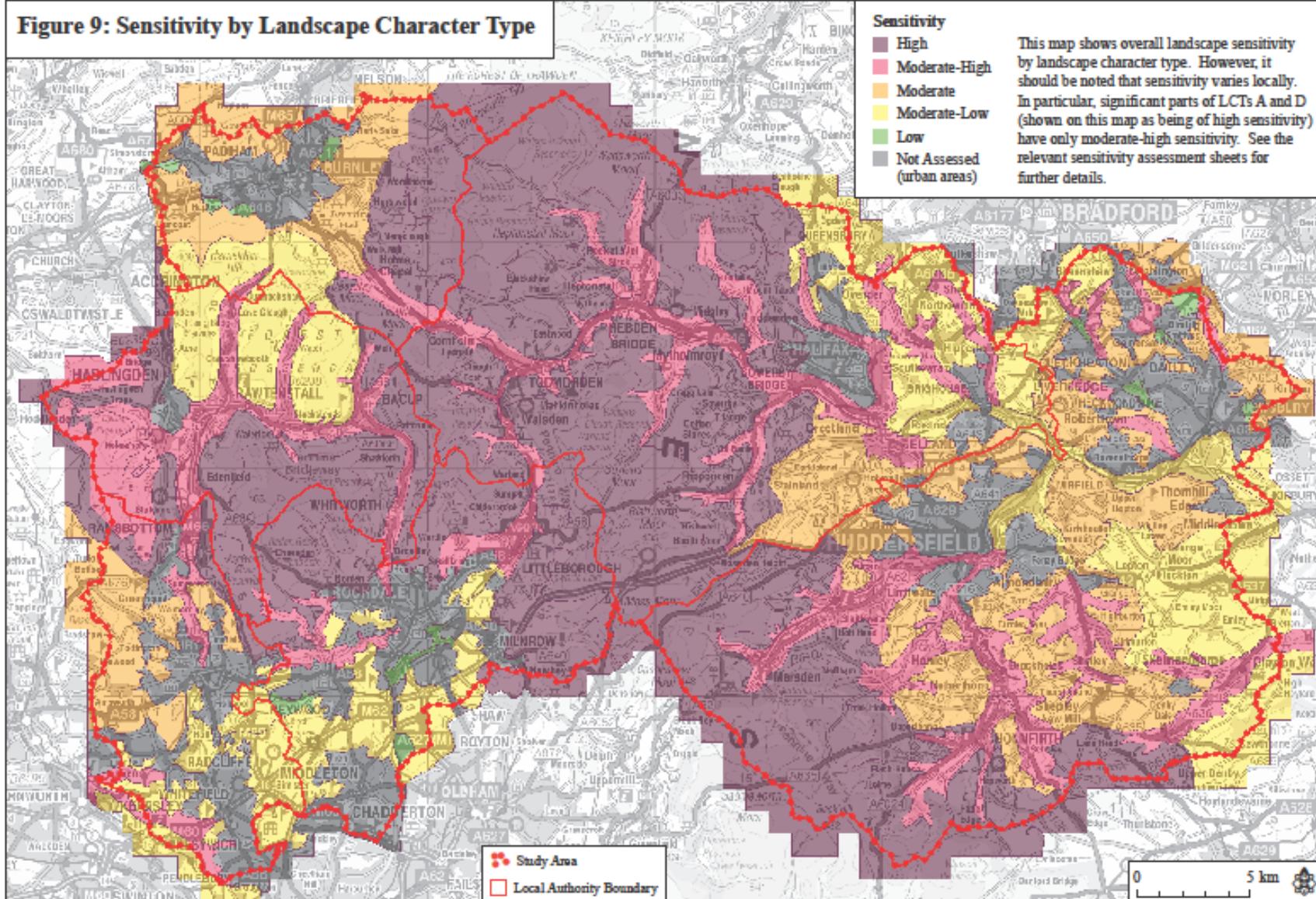
General guidance on wind energy proposals

**Figure 7: Landscape Character Types**

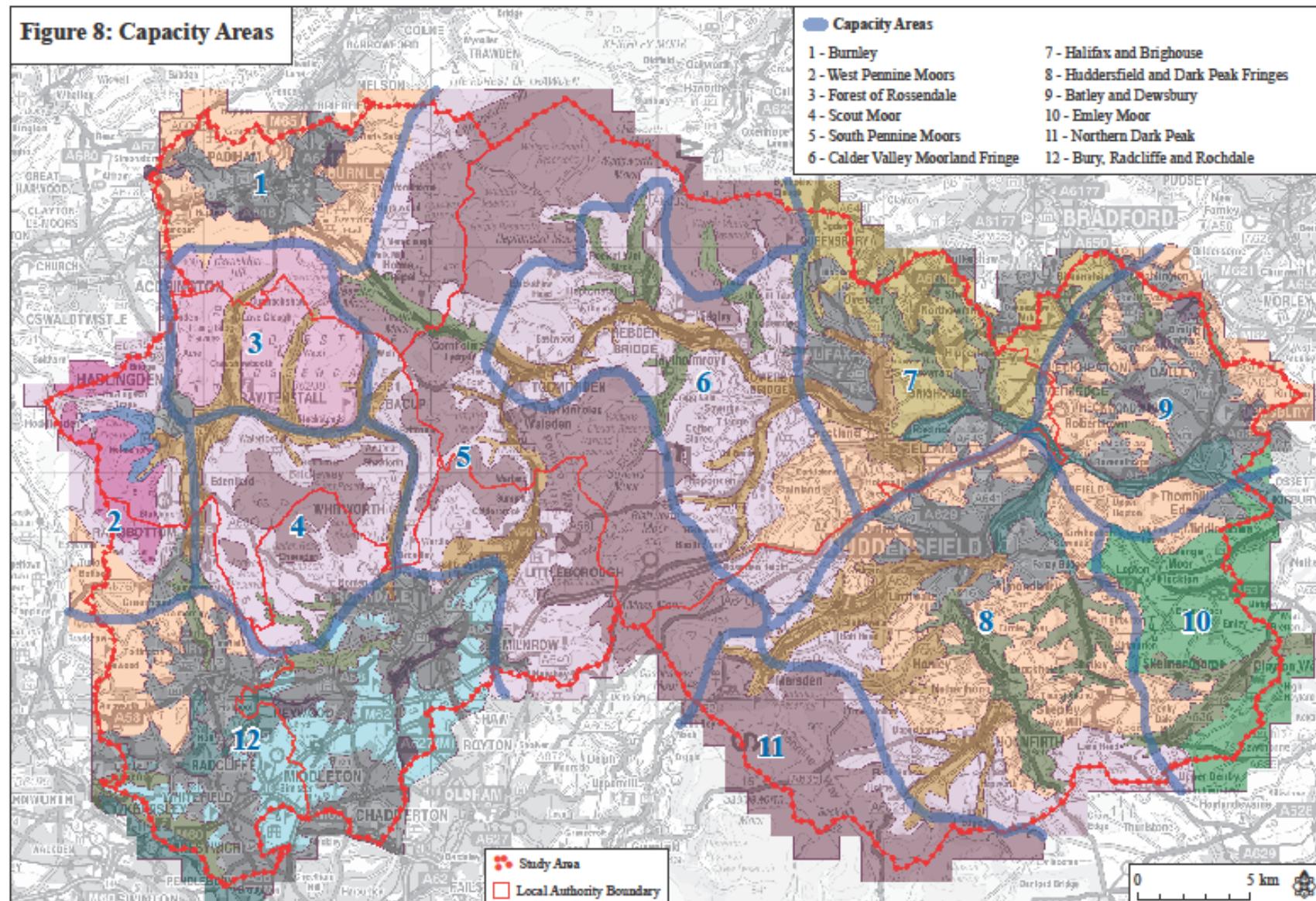


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**Figure 9: Sensitivity by Landscape Character Type**



**Figure 8: Capacity Areas**



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# Definitions

- **Landscape character**
  - the distinct and recognisable pattern of elements that occurs consistently within a particular type of landscape
- **Landscape sensitivity**
  - extent to which a landscape is vulnerable to change due to wind energy development due to potentially significant adverse impacts on its fabric, character, quality, value or amenity
- **Landscape capacity**
  - extent to which a landscape can accommodate wind energy development without significant adverse impacts on its fabric, character, quality, value or amenity

# Landscape character assessment

- Main source: SCOSPA Landscape Character Assessment and Guidelines (1998)
- Plus basic assessment of parts of the study area that fall outside SCOSPA area (Bury, Rochdale, Calderdale and Kirklees)
- See Annexes 1 and 2 of the report
- SCOSPA assessment was subject to public consultation and includes a strategy for each landscape character type eg conservation or enhancement
- Ideally the landscape character assessment base information could be updated and improved (would then carry greater weight)

# Sensitivity assessment (1)

## Sensitivity criteria

- Scale
- Landform
- Landcover
- Built environment
- Skylines and settings
- Visibility and views
- Landscape quality (condition)
- Scenic quality
- Wildness and tranquillity
- Natural and cultural heritage features
- Cultural associations
- Amenity and recreation

# Sensitivity assessment (2)

- Each landscape character type was assessed against these criteria – tabular summary
- Overall sensitivity level assessed based on combined weight of evidence
- NB: Sensitivity varies across each LCA.  
Overall sensitivity level is simply a guide...

# Capacity assessment (1)

Defined types and scales of development:

## Turbine groupings

- Single – 1 turbine
- Small group – up to 3 turbines
- Small wind farm – up to 5 turbines
- Medium wind farm – 6-10 turbines
- Large wind farm – 11-20 turbines
- (IPC threshold)
- Very large wind farm – 21-30 turbines

## Turbine heights

- Very small – 25m or less to blade tip
- Small – 25-60m to blade tip
- Medium – 60-90m to blade tip
- Large – 90-130m to blade tip

These definitions are used throughout the study

# Capacity assessment (2)

- For each ‘capacity area’ consideration was given to:
  - Fit with landscape character and sensitivities
  - Scale of development that may be accommodated (in terms of both turbine grouping and turbine height)
  - Cumulative impacts that might occur (taking account of existing developments within 30km)

# Capacity assessment (3)

- For each capacity area advice was prepared:
  - Constraints
  - Opportunities
  - Guidance on siting, layout and design issues
  - Cumulative and cross-district issues
  - Overall capacity (including any existing development)
- Overall capacity identifies thresholds or ‘tipping points’ of landscape change due to wind energy development
- Landscape with a strategy of ‘conservation’ generally has less capacity than one with a strategy of ‘enhancement’

# What capacity is there and where?

- Little further scope for large scale development without affecting integrity of main South Pennine spine (conservation of which should be a key priority)
- Best larger scale opportunities relate to expansion/repowering of existing sites – effectively strategy of concentrating the impacts in a limited number of locations
- Smaller scale peripheral opportunities – reasonably widespread
- Also: transport corridors, business parks – significant potential, should be related to environmental enhancement overall

# Principles affecting landscape capacity

- General principles relating to turbine groupings, turbine height, cumulative impacts and spacing
- Principles in different types of landscape (upland, intermediate, lowland, urban and industrial)
- For example...

# Turbine groupings and heights

- **Groupings:**
  - Landscapes with simple, strong horizontal form better suited to large groupings
  - Smaller scale, more intricate landscapes are better suited to small groupings
- **Height:**
  - Turbine height should be proportionate to landform height ie taller turbines on taller hills
  - *But* extensive, flat uniform lowlands may also be able to accommodate large turbines (large horizontal extent diminishes perceived height)

# Cumulative impacts

- Satisfactory spacing depends both on landscape character and on degree of intervisibility
- Retention of areas of undeveloped landscape is important
- Inconsistencies in turbine layout, height or design may cause increased impact
- Rules of thumb:
  - Separation distances of 6-12km are desirable to prevent landscape becoming dominated by wind farms
  - Wind farms located within 3-5km of each other may read as clusters

# Principles for good siting, layout and design (1)

- **Skilines** – especially important in the South Pennines with its distinctive gritstone edges, ideally set development back c400m from edges
- **Settings** – protect settings of landmark features eg monuments and conservation areas
- **Views** – consider impacts on important viewpoints and routes eg Stoodley Pike, Pennine Way ...
- **Valued characteristics and features** – protect areas of wild character and features of natural and cultural heritage interest contributing to landscape appreciation
- **Layout** – turbines should read as a coherent group, avoid significant overlaps, reflect existing landscape patterns eg transport corridors

# Principles for good siting, layout and design (2)

- **Separation** – ensure adequate separation from walking, riding and recreational routes (500m sensible minimum) as well as from dwellings
- **Scale of development** – lateral extent and height should be in proportion with and not overwhelm key landscape elements, avoid proximity to scale comparators
- **Design** – avoid competing with or creating visual clutter when seen together man-made elements such as pylons
- **Visual focus** – respect existing visual foci such as textile mills; consider creating new visual foci in areas such as business or commercial parks (functional relationship)

# Principles for good siting, layout and design (3)

- **Access tracks** – minimise loss of traditional landscape features, use existing access tracks where possible, beware routes that requiring over-engineering and extensive foundations
- **Recreation** – avoid access tracks crossing PROWs, minimise use of access tracks by recreational motor vehicles, avoid fencing of open moor
- **Transformers** – house within turbine tower
- **Substation and control buildings** – avoid high, exposed locations, use traditional materials and styles, minimise fencing and lighting
- **Grid connections** – underground where possible, explore potential to underground existing transmission lines



Skalines: Prominence of turbines on sharp South Pennine gritstone edge  
(could be reduced by setback)



Settings: Many key landmarks in South Pennines including Emley Moor Tower, Stoodley Pike, Peel Tower



Views: Key views from the Pennine Way, Pennine Bridleway, many long distance paths – reveal wild character



Layout: Coherent, no significant overlaps, reflects existing patterns



Scale and proportion: Simple, strong horizontal landform accommodates larger turbine groupings



Scale and proportion: Turbine height proportionate to landform height in a drumlin landscape



Scale: Proximity to scale comparators increases apparent turbine height



Scale: Potential scale comparators at Todmorden Moor?



Design: Functional relationship between turbine and farm buildings reduces impact



Design: Turbines seen with electricity pylons create visual clutter



Visual focus: Scope to create new visual foci in locations such as business parks



Site access: Poorly sited access may damage traditional landscape features, require major engineering



Other infrastructure: Risk of disruption to access and open character due to engineering works and substation buildings, fencing



Grid connections: underground where possible

# Also in the report

- Section 6:
  - How to use the report
  - Summary of siting, design and layout principles
  - Good practice requirements for landscape and visual impact assessment (LVIA)
  - Checklist of LVIA presentation materials
- Use in scoping and in review of applications



Exercise

# Assessing a wind energy proposal

- Groups 1 and 2:
  - Site: GR 825255
  - Development: 6 turbines 100m in height
- Groups 3 and 4:
  - Site: GR 077115
  - Development: 3 turbines 40m in height
- Use the report and the OS map

# Questions

- What are the key landscape sensitivities of this area?
  - Look at Figure 7 and sensitivity assessment for relevant landscape character type
- What is the capacity wind energy development here?
  - Look at Figure 8 and capacity assessment for the relevant area
- What siting, layout and design issues need to be considered?
  - Develop an initial view on key issues and likely acceptability or otherwise of the scheme



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