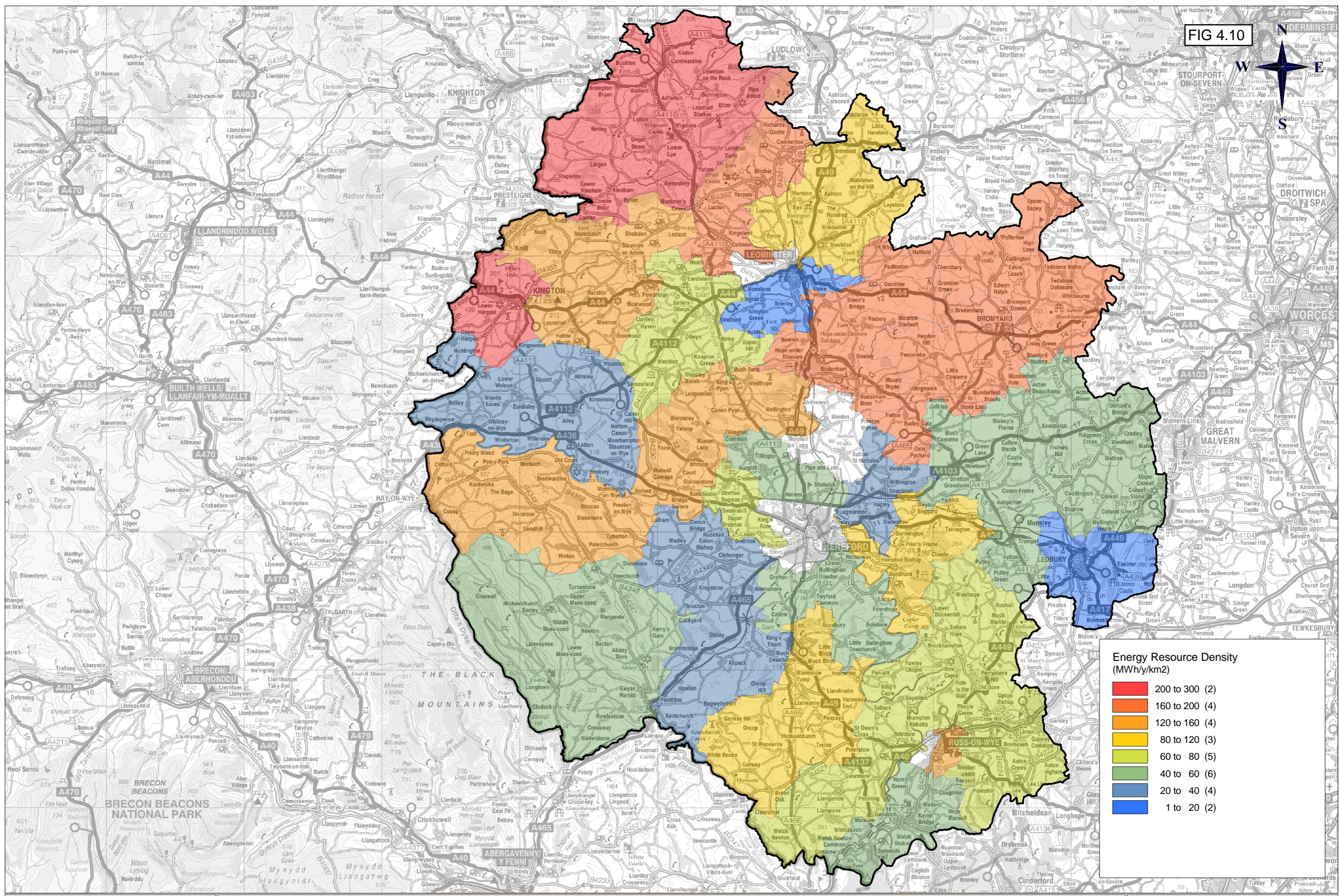


FIG 4.10



**Energy Resource Density (MWh/y/km<sup>2</sup>)**

|  |                |
|--|----------------|
|  | 200 to 300 (2) |
|  | 160 to 200 (4) |
|  | 120 to 160 (4) |
|  | 80 to 120 (3)  |
|  | 60 to 80 (5)   |
|  | 40 to 60 (6)   |
|  | 20 to 40 (4)   |
|  | 1 to 20 (2)    |

Scale: 1:250 000 @ A3

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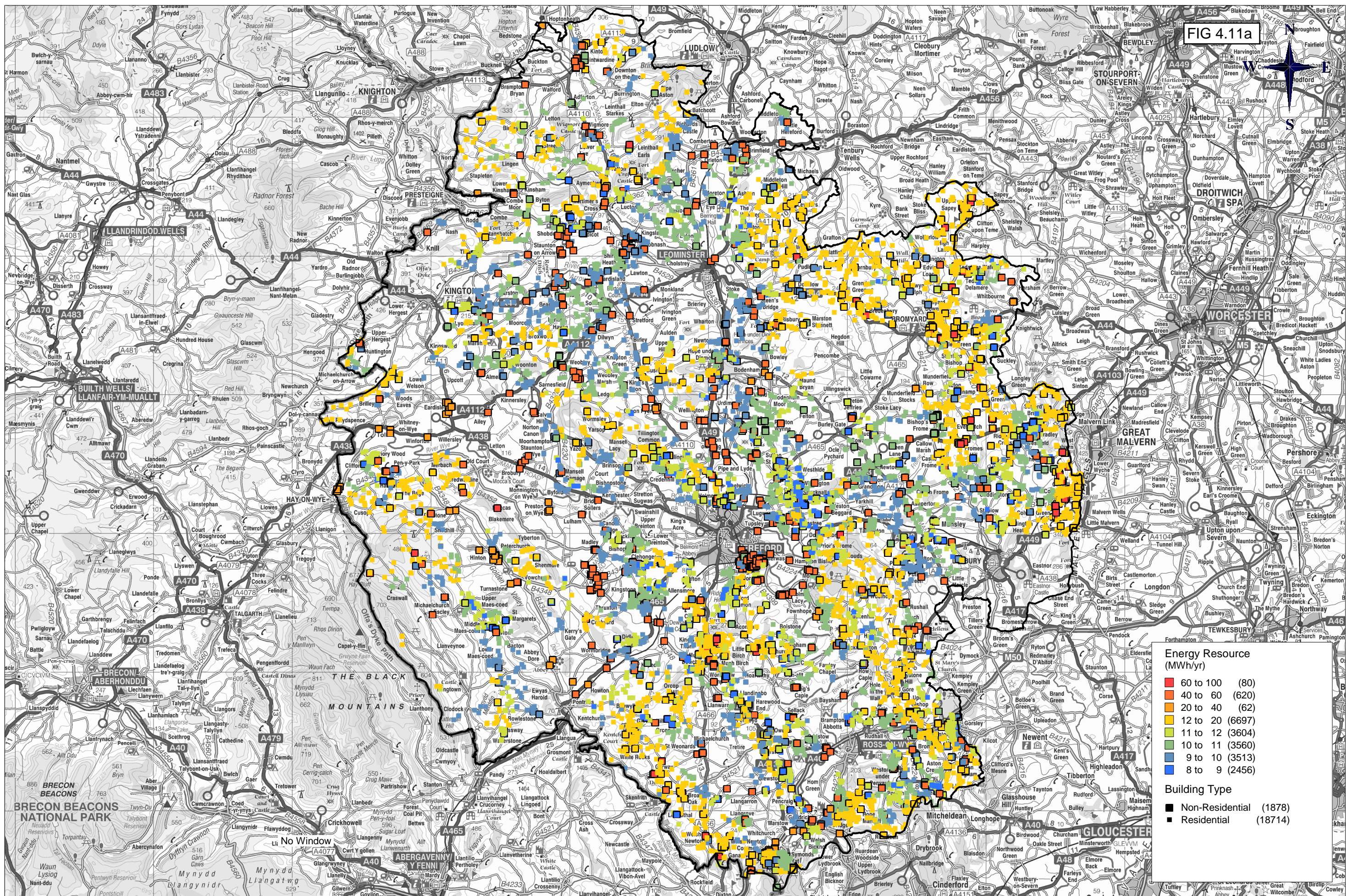
Drawing Notes:  
Level 6b gives practically viable wind resource following removal of all National Parks, Areas of Outstanding Natural Beauty, and Heritage Coast referred to as landscape constraints. The constraints used at levels 3, 4, 5, and 6a have also been applied. The large wind resource areas left at level 6b were also removed as part of constraint level 5. This step was taken so that the available resource was not counted twice.  
Wind resource energy values have been based on the following benchmarks:  
A wind speed log law calculation was used to estimate the wind at 30m above ground level from the 25m reference height in the NOABL wind speed database. A ground roughness value of 0.03 was used in the calculation (x 1.027)  
Installed capacity was estimated based on 4 turbines occupying an area of 1 km<sup>2</sup> (900kW/km<sup>2</sup>)  
This figure is based on an ACSA 225kW turbine and the expected maximum density for placement of turbines at this scale  
Total energy output was then derived from the number of turbines and the energy curve for the ACSA 225kW turbine.  
Energy output for each turbine varied based on the wind speed 30m above ground level which was linked back with the turbine energy curve  
The thematic map (colouring) represents total energy resource (MWh) or energy resource density (MWh/km<sup>2</sup>)  
The %s shown in the table represent the contribution to Herefordshire's Electrical and Total energy demand in 2007 (DECC)  
The carbon saving was calculated based on 0.537kg of carbon / kilowatt hour of electricity produced (DEFRA)

INS Ref: 348600E : 245900N Map Ref: Landranger Map:149 - OS 100K Ref: SO

Herefordshire Renewable Energy Study  
Medium Scale Wind  
Energy Resource Density by Ward - Level 6b

|                      |                      |
|----------------------|----------------------|
| Project Ref: 42-0347 | Dwg Ref: Figure 4.10 |
| Drawn: S. Clarke     | Date: 29 JUL 2010    |
| Checked: S. Allen    | Date: 29 JUL 2010    |

FIG 4.11a



Scale: 1:250 000 @ A3

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Wind resource energy values have been based on the following benchmarks:  
The wind speeds used were taken from the NOABL database at reference height of 10m and 25m. These were adjusted using a wind speed up calculation to estimate the wind speed at 6m  
Installed capacity was estimated based on the assumption that domestic, commercial and industrial buildings could support a 1.5kW, 6kW, 15kW turbine dependent on building classification (See Appendix for building classification and representative turbine used)  
Individual buildings were identified using the LPG database. Addresses with the same coordinates were counted as single buildings.  
Total energy output was derived by matching the wind speed for each turbine with either the Swift 1.5kW, Proven 6kW or Proven 15kW energy curve. Areas with wind speeds below 4.5m/s were excluded from the study  
Energy output for each turbine varied based on the wind speed at the relevant hub height above ground level which was linked back with the turbine energy curve  
The thematic map (colouring) represents the allocated installed capacity (kW) for each building  
The % shown on the map represent the contribution to Herefordshire's electricity demand in 2007 -1037.8450553 GWh/yr and total energy demand in 2007 - 5176.62131103582 GWh/yr (DECC)  
The carbon saving was calculated based on 0.537kg of carbon / kilowatt hour of electricity produced (DEFRA).

Registered Office: Sir Henry Doulton, Forge Lane, Etruria, Stoke-on-Trent, ST1 6BD, United Kingdom

348600E : 245900N Landranger Map:149 - OS 100K Ref: SO

Herefordshire Renewable Energy Study  
Small Scale Wind  
Energy Resource by Building Type

Project Ref: 42-0347  
Drawn: C. Bines  
Checked: S. Clarke

Dwg. Ref: SSWD\_BDG\_R\_420347  
Date: 28 JUL 2010  
Date: 28 JUL 2010

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