Impact of wind farms on the value of residential property and agricultural land

An RICS survey

Background

In the past century, the global average temperature has increased by approximately 0.6 ^{o}C while sea levels have risen by 10 – 20 cm. Climate change, as described by the UK's Prime Minister, is "the most important environmental issue facing the world today". There is a broad scientific consensus that the acceleration in the rate of climate change is due largely to the emission of greenhouse gases such as carbon dioxide (CO_2) and methane.

The UK government has ratified the Kyoto Protocol and is committed to reducing carbon dioxide emissions by 20% by 2020. To achieve this target, the UK government published the Energy White Paper[i] in February 2003 and recommended that 20% of the UK's electricity should be generated by renewable energy by 2020. To pave the way for this the Government updated planning advice (Planning Policy Statement 22) on renewable energy earlier this year. One of the major components of its strategy is an increase in wind-generated energy.

As the windiest country in Europe the UK is uniquely well placed to exploit this form of renewable energy. According to the British Wind Energy Association (BWEA), there are currently 90 wind farm projects in operation in the UK, adding up to a total of 1125 turbines and supplying enough energy for 440,000 homes. 15 projects are due to come online in 2004, adding a further 222 turbines. By 2005, it is predicted that the total installed wind energy generators will be enough to meet 1.3% of total supply (i.e. just under 1 million homes).

Whilst wind farm technologies offer many advantages, questions are being asked about the potential impact of this expansion on property values, particularly in the residential sphere. In order to examine whether there is any substance in these concerns, and to monitor the effects on land and residential property affected by wind farm developments, RICS (The

Royal Institution of Chartered Surveyors) has carried out an initial study to examine the impact of wind farm development. The purpose of the study is not to endorse or criticise wind technology, but rather to gauge professional property opinion about its impact on both residential property and agricultural land values.

Executive Summary

- 60% of the sample suggested that wind farms decrease the value of residential properties where the development is within view

- 67% of the sample indicated that the negative impact on property prices starts when a planning application to erect a wind farm is made

- The main factors cited for the negative impact on property values are:
    - visual impact of wind farm after completion
    - fear of blight
    - the proximity of a property to a wind farm

- Once a wind farm is completed, the negative impact on property values continues but becomes less severe after two years or so after completion

- A significant minority of surveyors with experience of residential sales affected by wind farm developments (40%) indicated that there is no negative price impact

- Only 28% suggested wind farm development negatively influences the value of agricultural land, while 63% suggested there is no impact at all (either positive or negative). The remaining 9% suggest a positive impact

- The survey suggests that wind farms do not impact on residential property values in a uniform way. The circumstances of each development can be different

- This report points to a need for further research to track the impact of wind farms and to examine in particular whether the nature of any adverse impact diminishes as wind farms become an increasingly familiar part of the rural scene.

Research methods

RICS conducted an initial questionnaire-based survey among its members at the beginning of September 2004. At the time of sampling for the survey, there were no onshore wind farm developments in the South East region connected to the national grid. This region was therefore excluded from the study. A total of 1,942 questionnaires were sent out and 405 responses received. Approximately a fifth of those persons responding say they have dealt with residential transactions affected by wind farm developments.

The study focused on those responses from surveyors with experiences of transactions affected by wind farms, analysing the data at both national and regional levels (i.e. five regions: Scotland, Wales, Midlands & Eastern Regions, Northern England and South West)[ii]. RICS conducted a follow-up survey with this specific group of respondents in October 2004 on the reasons behind any price impact. The response rate for the follow-up survey was 34% and therefore only national results are provided for this part of the survey.

Survey results

Experience of Chartered Surveyors in transactions affected by wind farms

Only 20% of the surveyors who responded to this survey have dealt with transactions affected by wind farms and their experiences vary.

In interpreting the results of the survey no attempt has been made to make a quantitative assessment of the impact of wind farm developments on the residential property market. The sample size of responses at a regional level is low and the distribution of responses by region in the main reflects the concentration of wind farms in particular locations around the country.

The largest responses were received from Scotland and Wales (representing 25% and 20% of the sample that have dealt with wind farm affected transactions respectively). Information obtained from the BWEA website (www.bwea.org) indicates that Scotland and Wales account for 43% of all wind farm projects in the UK. We have used information from the BWEA regarding the regional distribution of wind farms to derive weightings for the national results.

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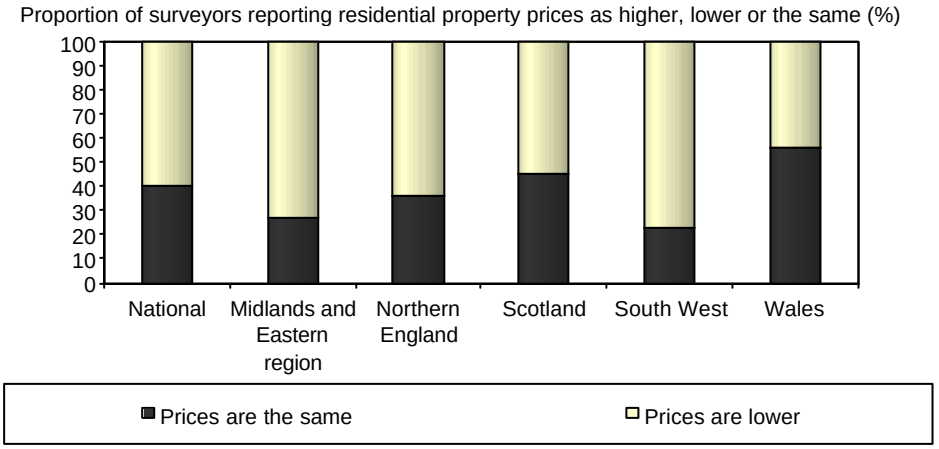
Actual effect

The findings suggest three effects of wind farms on the value of residential property and agricultural land:

- there are negative influences on the value of residential properties, though a sizeable minority report no impact on prices
- the influence is much less on agricultural land values, to the point that the majority of responses suggested the impact was nil
- nowhere is it considered that wind farms positively affect residential property values, although there was evidence of some positive impact on agricultural land

More than half (60%) of those surveyors involved in residential property transactions affected by a wind farm development (i.e where a wind farm is visible from the property), reported that values were lower than for comparable properties which were unaffected (Figure 1). However, this still leaves a sizeable minority of 40% of surveyors reporting no impact from wind farm developments on values.

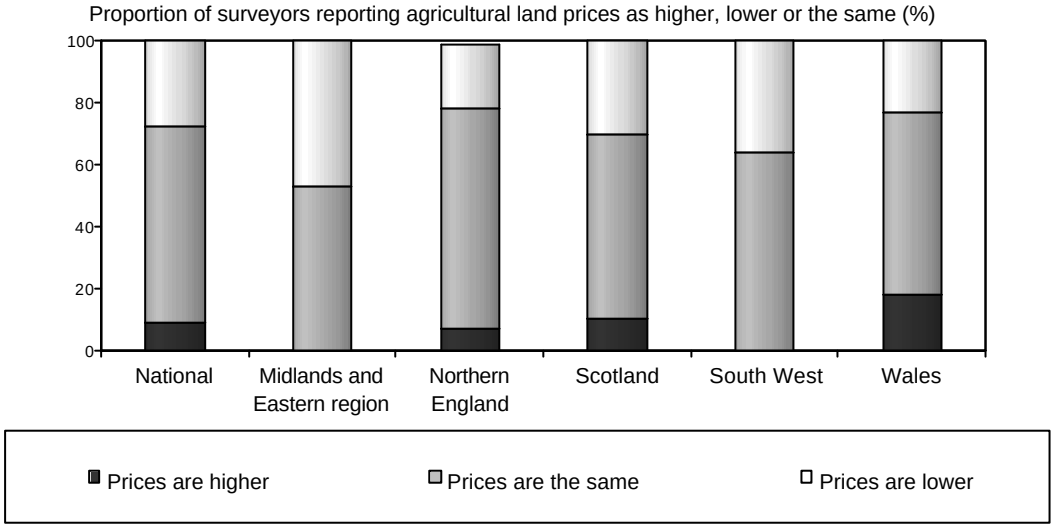
Figure 1 : Impact of wind farms on residential property values relative to comparable properties which are not affected



The regional results vary from 44% of surveyors in Wales reporting that residential property values are lower as a result of wind farm developments to a high of 77% in the South West.

Separately, we asked surveyors what impact wind farm developments had on agricultural land values. Of the sample, 28% indicated that wind farms have a negative impact on the value of agricultural land, whilst a majority (63%) suggest there is no impact. A small proportion, (9%) indicated that wind farms enhanced agricultural land values (Figure 2).

Figure 2 : Impact of wind farms on agricultural land values relative to comparable land which is not affected

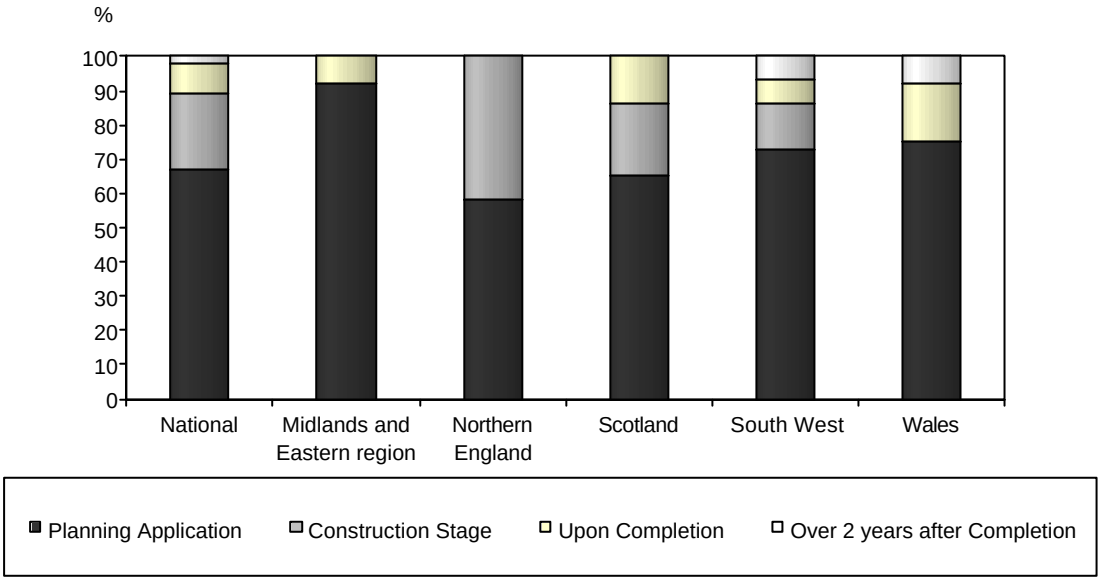


At what stage do wind farm developments start to impact on property values

For those surveyors who believe that residential property values are lower as a result of wind farm developments, a majority (67%) believe that there is an impact on values as early as the planning application stage. A further 22% report that the impact is first evident at the construction phase of development (Figure 3).

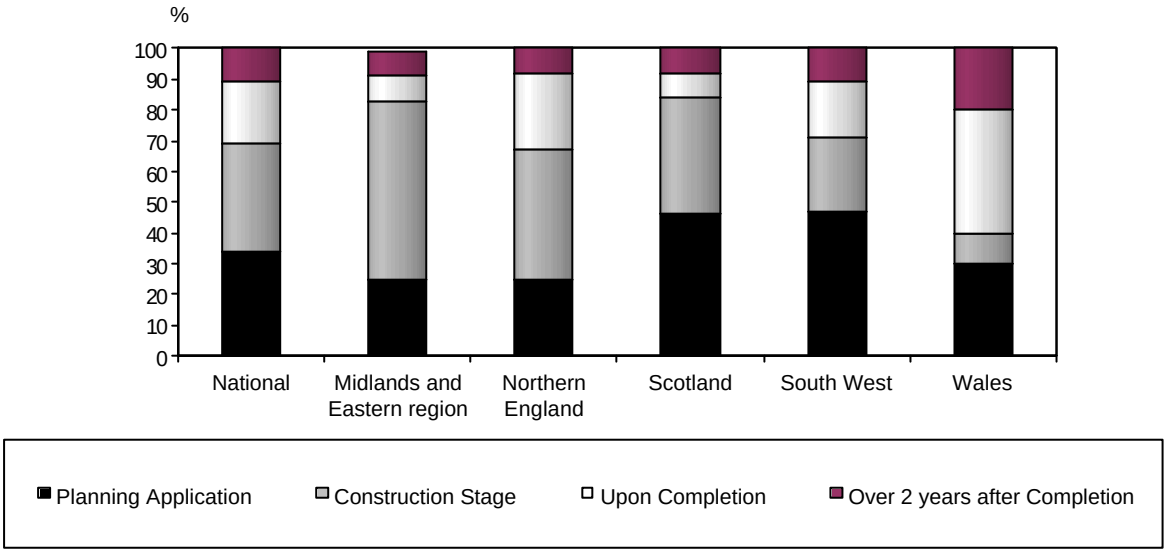
The results suggest that buyers are wary of potential developments at a very early stage in anticipation of a negative impact because of uncertainty over the size and location of a proposed wind farm.

Figure 3 : At what stage do wind farm developments start to negatively influence the value of residential property relative to unaffected comparable properties



The survey also asked at what point in time the negative impact of wind farm developments on residential property values is the greatest. Whilst the results highlight significant variations between the regions, from a national perspective the greatest impact comes at the planning application and construction stages (Figure 4). The results imply that the discount in property values (relative to comparable properties which are unaffected) reduces over time as buyers become aware of the specific characteristics of a development.

Figure 4 : At what stage do wind farm developments have their greatest influence on the value of residential property compared to property which is not affected



Reasons for the impact of wind farms on the value of residential property values

A follow-up survey asked surveyors who reported that wind farm developments had a negative impact on property values, to assign a degree of importance to various factors which may explain the existence of a price discount (Figure 5). Some of these factors may not be mutually exclusive but provide a guide to issues which may be impacting upon the market.

The most important reason for a negative impact of wind farms on the value of residential property is the visual impact after completion, closely followed by the fear of blight. The proximity of a property to a wind farm is also deemed fairly significant. The size of a wind farm is viewed as less important than the above issues, though its impact is likely to depend upon the distance from the development.

Figure 5: Reasons for negative impact on residential property values from a wind farm development

	Scale of 1-5 of importance; 1 = least important, 5 = most important					
% response for each issue	**1**	**2**	**3**	**4**	**5**	**Don't know**
Fear of blight	11	0	17	11	56	6
Construction disturbance	22	17	22	28	6	6
Visual impact after completion	11	0	11	21	58	0
Size of wind farm	6	18	35	6	35	0
Proximity to wind farm	11	22	6	11	50	0
Other environmental damage	25	31	19	6	6	13
Health risk	36	21	7	21	0	14

NB: figures may not sum up to 100% due to rounding errors for each issue

Conclusion

- The wind farm industry is still relatively new compared to other renewable energy industries. The number of surveyors who deal with property affected by wind farms will always be relatively low

- Among those respondents with experience in dealing with residential property transactions affected by wind farms, the survey results suggest that wind farm development reduces property values to some extent and that this impact starts at the planning application stage

- The three main reasons for this negative impact on property values are the visual impact after completion, the fear of blight and the proximity of residential property to a wind farm development

- A significant minority of surveyors (40%) reported no impact from wind farm developments on residential property values

- The negative impact of wind farms on property values appears to decline over time. This may suggest that the impact lessens as wind farms become a more established part of the rural landscape

- There is a need for more work to provide a better understanding of the way in which wind farms impact on property, thereby enabling strategies to be developed to minimise any deleterious effects

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[i] DTI (2003) Our Energy Future – Creating A Low Carbon Economy. Energy White Paper, www.dti.gov.uk/energy/whitepaper

[ii] Surveyors in Northern Ireland were included in the questionnaire survey, but due to the low response rate, the analysis did not cover Northern Ireland.