Refereed Draft

Title

Identifying predictors of attitudes towards local onshore wind development with reference to an English case study.

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Abstract

The threats posed by climate change are placing governments under increasing pressure to meet electricity-demand from low-carbon sources. In many countries, including the UK, legislation is in place to ensure the continued expansion of renewable energy capacity. Onshore wind turbines are expected to play a key role in achieving these aims. However, despite high levels of public support for on-shore wind development in principle, specific projects often experience local opposition. Traditionally this difference in general and specific attitudes has been attributed to NIMBYism, but evidence is increasingly calling this assumption into question. This study used multiple regression analysis to identify what factors might predict attitudes towards mooted wind development in Sheffield, England. We report on the attitudes of two groups; one group (target) living close to four sites earmarked for development and an unaffected comparison group (comparison). We found little evidence of NIMBYism amongst members of the target group; instead, differences between general and specific attitudes appeared attributable to uncertainty regarding the proposals. The results are discussed with respect to literature highlighting the importance of early, continued and responsive community involvement in combating local opposition and facilitating the deployment of onshore wind turbines.

Running Title: Predictors of attitudes towards wind development

Keywords: NIMBY; wind farm; attitudes

> *"Compared to other kinds of electricity production, a vast majority favours wind energy. It seems, therefore, quite puzzling why it is so hard to succeed in building new wind turbines…"*
> *(Wolsink, 2000, p.50).*

1. Policy Background

In May 2007 the UK government published an Energy White Paper, which outlined the challenges faced by the UK in sustainably meeting its future energy requirements. Within this report the government indicated that the two biggest long-term challenges faced by the country were the need to ensure affordable and secure sources of energy whilst simultaneously reducing carbon emissions in order to mitigate the effects of climate change (DTI, 2007).

The government proposed that a multi-faceted approach to meeting these challenges should be employed, involving not only the encouragement of energy saving initiatives but also increased investment and development of low-carbon technologies (e.g. renewable energy technologies), steps to ensure a "fully competitive and transparent international [energy] market" (DTI, 2007, p.8) and the introduction of legally-binding carbon emissions targets. Indeed, as a result of the Climate Change Act 2008, the UK is now legally bound to reducing carbon emissions by at least 80% by 2050 (compared to 1990 levels).

At present, just less than one third of UK carbon dioxide emissions result directly from electricity generation (Prime et al., 2009). As such, the government sees a move towards cleaner electricity generation as a key means of helping to satisfy

its ambitious carbon-emissions targets. This article focuses on establishing the predictors of attitudes towards local renewable energy technology development (specifically onshore wind) with a view of informing policy decisions to aid progression towards these targets.

At present the UK is heavily reliant upon fossil fuels (primarily coal and natural gas) to meet the majority of the nation's demand for electricity (approx. 74%). Nuclear power accounts for around 18% and renewables (primarily wind power) accounting for just 4% (3% comes from other sources) (see DTI, 2007). Although such diversity contributes to security and consistency of the electricity supply in the UK (by reducing over-dependence on one particular source of energy), the reliance upon fossil fuels to fulfil nearly three quarters of the UK's electricity demand is inconsistent in meeting the challenges in energy policy already outlined. As such, the government is seeking to increase the share of electricity generated from lower-carbon sources of energy (e.g. renewables and nuclear power) and is doing so through the introduction of new legislation (e.g. Climate Change Act 2008; Energy Act 2008) and continued commitment to existent low-carbon initiatives (see http://www.decc.gov.uk).

Renewables (e.g. wind power, hydro-electricity, biomass, wave, etc.), by the fact they produce very little in the way of carbon dioxide across their lifetime, are seen as integral to the UK government's strategy of meeting the demands for electricity whilst tackling the threat of climate change (DTI, 2007). As such, they have put in place progressive targets of meeting an increasing share of our electricity demand from renewable sources, and have incentivised progression

towards these targets through the introduction and enforcement of the Renewables Obligation (RO) scheme. The RO scheme is legislation that requires licensed electricity companies operating within the UK to source a certain (and increasing) percentage of their electricity from renewable sources. In 2006/07 this target was set at 6.7%, this has since increased to 9.1% as of this year (2008/09) and will rise to 15.4% by 2015/16, and so on (for more details see The Renewables Obligation Order, 2006).[1]

2. The Role of Onshore Wind

Although certainly not the only renewable energy technology available to electricity suppliers aiming to meet their RO targets; onshore wind-turbines are perhaps at present the most technologically viable and cost-effective of the available options (Loring, 2007). Indeed, in some countries it has been suggested by some that wind power in favourable locations is now a real competitor to traditional forms of power generation (e.g. Ackermann & Söder, 2002; Jäger-Waldau & Ossenbrink, 2004). What is more, in all major wind-power producing nations there is overall support for the use of wind-power in principle (Krohn & Damborg, 1999). For example, in the UK polls suggest that between 70-80% of people support the use of wind power for generating electricity in *general* (BWEA, 2005, see also Krohn & Damborg, 1999).

Thus, it is perhaps unsurprising that many energy companies have chosen to invest heavily in onshore wind projects. However, as Wolsink (2000) makes clear, "It is one of the most common mistakes in facility siting to take *general* support for granted and to expect people to welcome developments they claim to

support" (p.50, italics added). For although it is true that in general support for onshore wind power and other renewable energy technologies does exist in principle, specific projects often meet with opposition from members of communities earmarked to house such projects (e.g. Ek, 2005; Graham et al., 2009; Krohn & Damborg. 1999; Loring, 2007; van der Horst, 2007; Wolsink, 2000). Such opposition is problematic as it often leads to delays in the receipt of planning permission for developers but also means that many projects (and hence valuable renewable generating capacity) never see the light of day (see Toke, 2005), which is making achievement of the UK's just but ambitious renewable energy targets ever more difficult.

The government's commitment to the expansion of renewable generating capacity in the UK, in combination with onshore wind's competitiveness as means of power generation, is likely to mean that an increasing number of communities will be approached with proposals for wind energy projects in the near future. If long delays in the planning process are to be avoided and a greater proportion of the proposed wind capacity commissioned, then research into the precise reasons as to why members of host communities engage in active opposition (or active support) of proposals is of fundamental importance (see Devine-Wright, 2005; Wolsink, 2007).

3. Not Just NIMBY: Clarifying the reasons behind local opposition

Since its conception, the term NIMBY (Not In My Back Yard) has become popular amongst the public, media and academics alike as an expression to describe any form of local opposition to almost any development (Burningham et

al., 2006; Wolsink, 2007). However, despite ubiquitous usage, NIMBY is actually a very specific term; referring to a situation in which someone has a positive attitude towards something in general but accompanies this with a motivation to oppose its installation locally, due to reasons of self–interest (Wolsink, 2007).

Many researchers have found that when defined strictly in these terms, NIMBYism is relatively rare and certainly is too simplistic to be used as a sole explanation for *all* local opposition to proposed development (e.g. Bell et al. 2005; Ek, 2005; van der Horst, 2007; Wolsink, 2000, 2006, 2007; see also Burningham et al., 2006 for commentary on the limitations of the NIMBY concept). These researchers do not necessarily disagree that *some* opposition *might* result from concern for personal utility but they do assert that an often incorrect and indiscriminate usage of the term, has infused NIMBY with derogatory connotation and left it outdated and lacking explanatory value (e.g. Burningham, 2000; Ellis, 2004; Hunter & Leyden, 1995; Kempton et al., 2005; Lake, 1993; Sjöberg & Drottz-Sjöberg, 2001; Wolsink, 2007). Indeed, there are increasing calls within some quarters for the term to be scrapped in academic writing (e.g. Burningham, 2000; Wolsink, 2006), although such calls have been met with their own degree of local opposition (e.g. Hubbard, 2006).

The controversies surrounding NIMBY as both a catchall term for opposition and as a means of explaining the discrepancy between the high levels of general support for wind and low levels of planning success, has prompted much debate. Indeed, recent research has sought to establish just how prevalent NIMBYism is

in comparison to these other forms of objection (e.g. Devine-Wright, 2005; Warren et al., 2005; Wolsink, 2000, 2007) and additionally, how good NIMBYism is as an explanation for the 'social gap' that has emerged between perceived support for wind power in general and low levels of planning success (Bell et al., 2005).

For example, Wolsink (2007) suggests that there are four types of opposition that tend to accompany proposals for local development (not just wind turbines): (i) Acceptance of the technology in principle but local objection based upon narrowly self-interested concern for personal utility (i.e. NIMBY as traditionally conceived); (ii) Objection based upon an existing and continued *general* rejection of the proposed technology; (iii) Objection arising from the development of a negative *general* attitude following discussions about a specific local project; and (iv) Acceptance of the technology in principle but a motivation to object locally due to perceived weaknesses with the proposal (most usually rooted in concern over landscape despoliation).

With respect to how opposition might lead to a shortfall in planning approval despite apparently high levels of general support (i.e. a 'social gap'); Bell and colleagues (2005) hypothesise that NIMBYism is just one of three potential explanations. They argue that whilst a discrepancy in general and specific attitudes (motivated by self interest) could be partially responsible for the shortfall, it is also possible that a *democratic deficit* in planning decisions or a large number of locals exercising a principle of *qualified support* could be responsible.

The *democratic deficit* hypothesis claims that because local opponents are more likely to act in accordance with their attitudes, they hold disproportionate sway over planning decisions. This means that wind farm proposals can be rejected even in the face of majority local (but inactive) support. The *qualified support* hypothesis claims that whilst people might support wind power in principle, there are often caveats to this support that are not registered by typical opinion surveys. Thus, when it appears that local opposition is coming from selfish people who ostensibly hold (unconditional) general support for wind development (i.e. NIMBYs), in reality it is emerging rationally from those individuals who feel that the specifics of a proposal infringe upon their conditions for general acceptance (see also Wolsink, 2000).

In sum, substantial evidence now exists that questions the extent to which NIMBY is; (a) a valid and useful term (e.g. Burningham, 2000; Hunter & Leyden, 1995); (b) responsible for *all* the local opposition that tends to accompany onshore wind development (e.g. Wolsink, 2000, 2007); and (c) responsible for the 'social gap' that exists between the high levels of general support and comparative difficulty in achieving planning permission (Bell et al., 2005). However, whilst it might be fair to conclude that opposition to localised wind development is 'not just NIMBY'; the question as to what is actually driving local resistance to wind projects remains (e.g. Devine-Wright, 2005). It is only by taking the time to acknowledge and understand these motivations that steps be taken towards developing effective policy initiatives to help facilitate the deployment of onshore wind projects, which are seen by the UK government as

being integral to the UK's move towards a low-carbon energy future (DTI, 2007).

Within this article we use multiple regression analysis to establish the predictors of specific attitudes towards mooted onshore wind development within Sheffield, England. It was hoped that this research we would be able to identify (and better understand) the caveats that host communities place upon their acceptance of local wind development. Importantly, we report on the attitudes and opinions of two distinct groups of respondents; one group living close to sites identified as being suitable for onshore wind development (target group) and an appropriately matched comparison group. The presence of the comparison group allowed us to investigate the extent to which factors found to predict attitudes within the target group were specific to those living in the vicinity of proposed development or likely to be shared by the general population at large.

3. Background to the study

In light of the national renewable energy targets proposed by the UK government, Sheffield City Council (2006) commissioned a "Scoping and Feasibility Study on Renewable Energy in Sheffield". The primary aim of this study was to examine the suitability of sites within the administrative boundary of Sheffield City Council for the installation of renewable technologies.[2] Although several different renewables were considered within the study (including biomass, hydro-power, and photovoltaics), of particular interest to this research was the scoping that occurred regarding the installation of large onshore wind turbines.

In all, 30 potential sites for large wind turbines were examined; however, all but four of these sites were deemed unsuitable for development. The four shortlisted sites were later identified as being privately-owned land at Hesley Wood and Smithy Wood and Council-owned land at Butterthwaite Farm and Westwood Country Park (see Figure 1).

<Please insert Figure 1>

The announcement of the plans to develop these sites quickly began to stimulate debate within the local media and the local population despite there being no concrete proposals in place. It was our aim to investigate how favourably or unfavourably communities in the area likely to be affected by the developments, and a comparable but unaffected population, were responding to the announcements.

4. Questionnaire Construction and Distribution

4.1 The Questionnaire

In order to assess local opinion to the announcement a questionnaire was constructed. The questionnaire included an introduction section (section A), four experimental sections (sections 1-4) and a final demographics section (section B). Brief details of the main concepts investigated in each section of the questionnaire can be seen in Table 1.

<Please insert Table 1>

4.2. Location selection

In total ten towns and villages were selected for questionnaire distribution. Five of these were adjacent to at least one of the identified sites (i.e. target towns), whilst the other five were located in a suitable comparison location to the N.W. of the city (i.e. comparison towns). The comparison location was selected on the basis that it was close enough to the identified sites so that the sample would be interested in the proposals but far enough away so that respondents should not be directly impacted by development at any of the four sites. Comparison towns roughly matched the target towns with respect to broad demographic (e.g. SES, expected age-range) and environmental make-up (e.g. proximity to main thoroughfares and woodland, etc.). The names and locations of the target and comparison towns and their relationship to the identified sites can be seen in Figure 1.

4.3. Distribution details

All respondents were required to be 16 years old or over and resident in the house to which the questionnaire had been distributed. In the target towns it was also stipulated that the households sampled should be within approximately 1.5km (~ 1 mile) of at least one of the four identified sites.

A total of 1,200 questionnaires were distributed and collected on a door-to-door basis over a two week period in June/July 2007 (i.e. 600 to the target towns and 600 to the comparison towns). It was ensured that distributors made face-to-face

contact with each respondent. This enabled the distributor to explain more about the purpose of the study and has also proven a good means of ensuring a high response rate. If a person had not completed the questionnaire or was not home when the distributor came to collect it (typically arranged for 2-3 days after distribution), they were provided with a Freepost envelope, an additional copy of the questionnaire and given instructions of where to return the questionnaire once it was complete (respondents were only asked to return one completed questionnaire).

4.4. Response rates

This method of distribution ensured that a total of 843 questionnaires were successfully returned. Of the returned questionnaires, 459 were complete with the remaining 384 containing some omissions. The authors deemed that to be incorporated in the statistical analysis that respondents should have answered at least three quarters of the items listed in the questionnaire (i.e. ≥ 90 of a potential 120 items). Using this selection criterion, a final sample of 809 respondents was attained (i.e. a 67.4% response rate). Importantly, this final sample contained similar numbers of both target and comparison respondents (i.e. 417 and 392 respondents, respectively) and each of the target and comparison towns sampled were well represented (i.e. response rates ranged between 58.2% [Shiregreen] and 79.2% [Chapeltown]).

5. Results

5.1. Participant details

Of the 809 viable respondents, 50.2% were male and 48.5% were female (1.4% of respondents chose not to answer this question). Respondents ranged in age from 16 to 89 years old (mean age of 49.3 years). Approximately two-thirds of the sample (i.e. 66.1%) were in some form of employment (i.e. full-time, part-time, self-employment), 23.5% were retired and 8.5% were students, home-keepers or seeking work (1.9% of respondents chose not to answer this question). The vast majority of those sampled were home owners (i.e. 87.1%) with just 8.4% living in rented accommodation (4.4% chose either not to answer the question or had 'other' housing arrangements). A clear majority of respondents had no friends or family living near to existing wind turbines (i.e. 84.5%), 11.6% did, whilst the remaining 3.8% were either unsure or chose not to answer the question.

5.2. Target and comparison group comparability

Chi-squared tests revealed that both the target and comparison groups were similar with respect to the number of male and female respondents (p = .843), the proportions of people living in rented and owned accommodation (p = .119), the proportion of people with family or friends living to existing wind developments (p = .158) and employment status (p = .100).

Independent-samples t-test analysis revealed that the target group was slightly older (M = 50.9; SD = 14.8) than the comparison group (M = 47.6; SD = 14.6), t (787) = 3.14, p = .002. It was also discovered that the target respondents had lived in the area for slightly longer than the comparison participants, t (796) = 2.16, p = .031. However, a Mann-Whitney U test revealed that respondents in

each group had been resident in their respective distribution zones for statistically equivalent proportions of their lives, $U = 75655$, $z = -1.27$, $p = .21$, and, as such, the two groups were deemed sufficiently similar to be compared within the subsequent analyses.

5.3. Checking for apparent "NIMBYism"

The first step in the analysis was to discover whether or not members of the target group were showing any evidence of what could be construed as NIMBYism. In order to do this, initial differences in respondents' general attitude towards wind turbine development in the UK and their stated attitude towards the proposed local development (i.e. specific attitude) were checked. Both general and specific attitudes were measured using 5 point Likert-type scales (5 = strongly in favour to 1 = strongly opposed).

It was clear that both the target and comparison groups were largely favourable to wind development in general (Table 2); however, respondents within the comparison group were significantly more positive to general development than those in the target group, t (733.1) = 4.33, $p < .001$ (independent samples). It is possible that this difference reflects a self-selection bias on the part of the target population. That is, due to the threat of development within the target area, a larger number of general opponents within the target population saw fit to return their questionnaire. Alternatively, this difference might reflect those members of the target community whose general opinion of wind development had changed as a result of the local proposals (see Wolsink, 2007).

On average, respondents in both groups were found to be less favourable to construction on the identified sites than in general (Table 2); however, the extent of this difference was found to be significantly greater within the target group than compared with the comparison group, t (733) = 5.21, $p < .001$ (independent samples).

<Please insert Table 2 here>

In sum, the expected 'gap' between respondents' general and specific attitudes (i.e. apparent "NIMBYism") did emerge within our data and was clearly larger amongst those living close to the proposed sites (i.e. the target group). On the basis of this finding, we then moved to consider which of the factors examined within our questionnaire might be predictive of specific attitudes and what proportion of the variance in these attitudes (if any) could be accounted for by considerations of personal utility.[3]

5.4. Regression Analyses

5.4i. General Attitude

First, the impact of the respondents' general attitudes towards wind development in the UK was calculated. This was considered to be an important first step serving to highlight the extent to which local support/opposition in each group might be resultant from a general like/dislike of onshore wind turbines.

When general attitude was entered into a simple regression analysis (incorporating specific attitude as the dependent variable) it was found to account for 38.8% of the variance in the target group, F (1, 412) = 261.56, $p < .001$, and 41.5% of the variance in the comparison group, F (1, 387) = 274.24, $p < .001$. Thus, in both groups a large (and roughly equivalent) proportion of the variance in specific attitudes could be attributed to respondents' general attitudes towards onshore wind development.

5.4ii. Establishing the other predictors

A series of five hierarchical multiple regression analyses were then conducted to establish the extent to which relevant items present within each section of the questionnaire (Table 1) were predictive of specific attitudes, whilst controlling for the impact of general attitude. Within each regression, items present within one of the sections of the questionnaire (i.e. Sections 1-4 and Section B) were examined. The results of each analysis can be observed in Tables 3-7 respectively. Although the majority of items were suitable for direct entry into the analyses, a number of the demographic variables (Section B) first required recoding into dichotomous variables (for details accompanying this procedure, see Appendix 1).

Analysis of the Section 1 variables (Table 3) revealed that for respondents in both groups, a perception that other members of the community were in favour of or opposed to development, was a significant predictor of specific attitudes. This variable positively related to specific attitudes meaning that greater perceived levels of community support were associated with more positive attitudes.

Perceived community opinion was particularly predictive of attitudes within the target population.

<Please insert Tables 3 and 4 here>

The Section 2 analysis (Table 4) revealed that in both groups, respondents' beliefs that wind development would carry general economic benefit was predictive of specific attitudes. The relationship between these variables was positive; indicating that the more certain respondents were that development would come associated with economic benefit the more favourable they were to development at the identified sites. Although predictive in both groups, this relationship was found to be particularly strong within the target group.

The Section 2 analysis also revealed that there were three additional predictors of specific attitude within the target group, each bearing some relation to economic gain (i.e. community trust fund, investment opportunity and cheaper electricity). All three items were found to account for a similar amount of the variance and showed positive relationships with specific attitudes. This indicated that the more attractive these benefits were perceived to be, the more favourable people were to local development. Within the comparison group analysis, only one additional item was found to be predictive, that being the potential for employment during the construction of the turbines, which again shared a positive relationship with specific attitudes. It is likely that this benefit was retained as a predictor within the comparison group due to the fact that it was the only potential benefit that

members of the comparison group could directly profit from (i.e. all the other benefits were target area specific).

<Please insert Table 5 here>

The Section 3 analysis (Table 5) revealed that very few of the potential concerns/hazards were retained as unique predictors of specific attitudes. In both groups, fears over the likelihood of landscape despoliation and house-price depreciation were retained as negative predictors of specific attitudes. These were accompanied by a fear of general unwanted change within the target group only. Interestingly, whilst the variance accounted for by a concern over house prices was similar in each group; fears over landscape despoliation were substantially more predictive in the target group. The negative relationship each of these items shared with specific attitudes indicated that the more likely respondents saw these negative consequences to be, the less favourable they were to development at the identified sites.

Preliminary analysis of the Section 4 items revealed there were strong correlations between each of the six 'trust' variables within this section of the questionnaire ($rs > .63$, $ps < .001$). Principal components analysis (PCA) confirmed that these items could be viably reduced to form a single composite variable, i.e. 'trust' (for a breakdown of the individual trust items, see Table 6).

When entered into the regression analysis, 'trust' was only retained as a predictor within the target group (Table 6). In essence, the more target respondents trusted

Sheffield City Council to act with due fairness and transparency when furthering their plans for wind development, the more likely they were to hold favourable attitudes towards development, and vice versa. The absence of a significant impact of 'trust' in the comparison group could suggest that issues of trust only become of importance when people are threatened by development. However, it should also be remembered that the trust items included within this question were context specific and target-group relevant.

<Please insert Tables 6 and 7 here>

Finally, the Section B analysis (Table 7) revealed that the demographic variables made a significant contribution to the variance in target group attitudes only. Within the target group, two of the entered items were retained as predictors; these being belief in anthropogenic climate change (positively associated with specific attitude) and home-ownership (negatively associated with specific attitude). In essence, people who believed that human activity was responsible for climate change were more likely to be favourable towards development on the identified sites, whilst home-owners were more likely to harbour unfavourable attitudes towards local development.

6. Discussion

This research was originally performed with the intention of identifying some of the factors important in predicting specific attitudes towards local wind development whilst accounting for respondents' general attitudes. The presence of a viable comparison group gave us greater insight into which of the predictors

retained through regression analyses were solely predictive of attitudes amongst the target population and which were apparently of more general concern.

6.1. The Importance of General Attitude

Perhaps the most important finding to emerge from this research was the finding that, within both groups, general attitude was a strong predictor of specific attitudes and continued to make a substantial contribution to the variance in all subsequent analyses despite the addition of other variables. This finding provides clear evidence that respondents within both groups were using their general attitudes towards wind development in the UK to guide their opinions towards development within the local context.

This finding is perhaps not surprising in the context of the comparison group. The distal nature of the identified sites meant that, for these respondents, development would have likely been considered in relatively 'general' terms. With respect to the target group, however, this finding asserts that a portion of local resistance demonstrated towards development within this study might have resulted from the respondents harbouring negative general attitudes towards wind turbines. Although our research did not seek to classify and quantify the various kinds of opponent expected to accompany siting controversies (see Wolsink, 2007); at a basic level the respondents' noted reliance on general attitudes to guide attitudes towards local development indicates that not all the opposition observed can be attributed to 'true' NIMBYism.

This finding is interesting from an energy policy perspective as it not only supports calls to move away from the unhelpful classification of *all* local opposition as NIMBYism (e.g. Bell et al. 2005; Burningham, 2000; Burningham et al., 2006; Ek, 2005; van der Horst, 2007; Warren et al., 2005; Wolsink, 2000; 2006; 2007) but also backs initiatives that seek to gain greater local support for wind projects through the education. That said, we would echo the warnings that advise against a presumption that opposition is motivated simply by a poor-understanding of the issue in hand (i.e. a knowledge-deficit).

We are not insinuating that there is necessarily no difference in the knowledge held by experts and lay-people; however substantial research exists to indicate that there are real weaknesses to policy based upon such assumptions (e.g. Brunk, 2004; Hansen et al., 2003; Miller, 2001; Peters, 2000; Sturgis & Allum, 2004; see also Bell et al., 2005) and that the general public are generally quite able to engage with major scientific and technological issues (Hagendijk, 2004). As such, we would suggest that a policy of 'topping people up' with the 'correct information' or addressing concerns with generic pro-wind argument is unlikely to be effective in addressing local opposition.[4] Rather, consistent with Bell et al.'s (2005) policy suggestions regarding a principle of qualified support, we would advise that educational strategies should be tailored to address the specific concerns held by members of proposed host communities.

Obviously, in order to implement such policy, there is a requirement that developers are both appreciative of the specific concerns held by a community and deemed sufficiently trustworthy for their information to be accommodated

(e.g. Healey, 1996, 1999). Bell et al. (2005) suggest that key to achieving both these aims is the involvement of local people in the planning process. Indeed, Hagendijk (2004) argues that local community involvement in scientific and technical debate is beneficial as it not only increases public awareness of the issues being discussed, but it also fosters trust and increased acceptance of discussion outcomes, even if these are inconsistent with stated preferences of the participants.

The concept of community participation is by no means a new suggestion and has been consistently linked with the linked with lower levels of opposition and increased chances of planning success (e.g. Devine-Wright, 2005; Krohn & Damborg, 1999; Loring, 2007; Walker et al., 2005; Wolsink, 1996; 2007; Zoellner et al., 2008). We agree that the key to reducing levels of opposition and increasing general acceptance of wind turbines lies in the early and continued involvement of host communities in the planning and decision-making process. As such, discussion of the remaining findings will be made with reference to this ideal.

6.2. The Other Predictors

From the Section 1 analysis it is clear that perceived community opinion is an important predictor of specific attitudes, particularly within the target group. In essence, the greater support that the respondents saw for development amongst members of their local community, the more likely they were to be favourable towards development themselves and vice versa.

The importance of perceived community opinion is perhaps particularly relevant within the current context due to the lack of firm details regarding the proposed development at the time of questionnaire distribution. Psychological research into social influence reveals that in uncertain situations or situations when there is little information available, the beliefs and judgments of others become important guides to how we should respond (see Cialdini & Trost, 1998; Turner, 1991). Moreover, evidence exists within the wind development literature, which demonstrates that public opinion to wind turbines is susceptible to such social influence (Devine-Wright, 2005; Johansson & Laike, 2007). With this in mind, it is perhaps not surprising that our respondents used their perceptions of community opinion to guide their own attitudes towards development.

Although this finding is encouraging, especially considering the broad levels of general support that exist for wind in principle, it is important to remember that perceived and actual community-opinion may not always align. For example, even within our target population, whilst 49.9% of respondents were found to be favourable to local development, only 11.8% were convinced that the majority of other community members would be in favour of development. It is likely that this difference reflects an increasing perception amongst the general public that wind turbines are a controversial technology (Khan, 2003). However, whatever the basis, it is clear that whilst perceived community opinion appears to be an important predictor of specific attitudes, reliance upon this to drive greater public acceptance for proposals could be risky if left unchecked. That said, if developers are able to successfully gauge and disseminate the *actual* levels of support that exist within a particular host community then, so long as they are

primarily favourable, our research would indicate that this could be a fruitful means of perhaps decreasing opposition and increasing support for a proposal.

The results from the Section 2 (benefits) analyses revealed that all the items retained within the target group analysis related either directly (i.e. chance to invest in the project and/or get cheap electricity from the development) or indirectly (i.e. annual community trust fund, general economic benefit) to personal economic gain. Although it is reasonable to take these findings as evidence that target respondents are considering issues of personal utility, we would argue against the labelling of this as evidence of NIMBYism. This is because analysis of the relationships that each of these items shared with specific attitudes revealed that it was the respondents who were more favourable to local development that were most likely to find them attractive. As such, those who were more opposed to development were unlikely to consider any of the economic benefits to be particularly appealing.

This finding supports the suggestion that efforts to pay-off opponents with the promise of financial reward or compensation might not necessarily be the best means of reducing the levels of local resistance (Bell et al., 2005; Kahn, 2000; Wolsink, 1994). This is not to say that financial incentivisation is neither ineffective nor unwarranted in the context of local wind development (see Bell et al., 2005); however, on the basis of our findings we would argue that a presumption that financial incentives will necessarily reduce *all* opposition is misplaced. Rather, it appears as though attractive financial incentives might be a key way of stimulating the formation of active pro-wind groups, the presence of

which has been linked with increased chances of planning success (e.g. Toke, 2005; Loring, 2007).

The Section 3 (concerns) analysis revealed the concerns retained as predictors of specific attitudes were largely identical within both the target and comparison groups. In both groups, those who felt that development would likely spoil the look of the landscape and reduce house prices were more likely to be negatively predisposed to development at the identified sites, and vice versa.

The discovery that a fear of landscape despoliation was retained in both groups was perhaps unsurprising on account of the fact that the appearance of wind turbines is considered by many observers to be a primary driver of local opposition (e.g. Gipe, 1990; Johansson & Laike, 2007; Thayer & Freeman, 1987; Toke et al., 2008; Wolsink, 2007). However, we also believe that within the context of this case study, the retention of this item reflected specific elements of the developmental context; as not only had there been no previous large-scale wind development within the Sheffield area at the time of distribution, but the relatively sub-urban nature of the identified sites meant that any development would impact upon the visual amenity of large numbers of people.

Onshore industrial wind turbines are, by their nature, highly visible, so directly addressing the concerns of those who do not find them aesthetically appealing is certainly a challenge for developers and policy-makers. This issue is compounded by the fact that whereas other inherent issues with turbines (e.g. noise) can be addressed with advances in technology (see Pasqualetti, 2001),

there is "…no 'technical fix' for the problem of landscape impact" (Bell et al., 2005, p.470). As such, the question of how to win over the hearts and minds of those opposing development of aesthetic grounds remains a pertinent one.

It is possible that as wind development become an increasingly common fixture on the horizon, that a familiarity with the technology could result in a greater acceptance of development amongst those who currently find them visually unattractive (consistent with the mere exposure effect, see Zajonc, 1968; see also Bornstein, 1989). Indeed, it is perhaps such familiarity that partially drives the positive shift in attitudes that often occurs following the construction of ostensibly controversial developments (see Krohn & Damborg, 1999; Warren et al., 2005; Wolsink, 2007). However, such shifts are long-term, do not answer the question of how best to facilitate deployment of turbines at present and also rely ironically on the continued expansion of onshore wind capacity.

Recently, however, research has begun to identify some options for addressing and lessening opposition based upon concerns over visual amenity in the short term. These include: (i) selection of sites adjacent to existent visible industry where development is likely to be perceived as additive to the landscape (e.g. Peel & Lloyd, 2007; van der Horst, 2007); (ii) employment of initiatives aimed at illustrating to residents what a development will look like once constructed (e.g. Benson, 2005; Lange & Hehl-Lange, 2005; Wolk, 2008); and (iii) involvement of communities in the site selection process (e.g. Jobert et al., 2007). It is our belief that the City Council's failure to employ any of these options before (or

immediately following) the announcement might have increased the likelihood of opposition grounded in concerns over visual amenity forming.

It is possible that without the benefit of the comparison group the retention of concern over house-prices within the target group might have been construed as evidence of NIMBYism. However, our comparison group analysis revealed that this concern was not necessarily determined by literal proximity to proposed development. Even if this variable had only been retained within the target group analysis, we would assert that labelling this as evidence of NIMBYism would be unjust. Evidence is mixed (e.g. Barrow, 2004; BWEA, 2005; Etherington, 2006; Sims & Dent; 2007; RICS, 2007); however, there is certainly some data to suggest that the threat of visible and proximal wind development *can* be detrimental to house prices. As such, we would maintain that opposition grounded in a concern over house-prices should neither be classified as irrational nor selfish but rather as something valid that should be addressed in an appropriate manner by developers.

A concern that wind development would introduce general unwanted change to the community was the only factor that clearly separated the two groups within the Section 3 analysis. This item shared a particularly strong negative association with specific attitudes within the target group and indicated that those who perceived that development would likely introduce unwanted change to the community were more likely to oppose development locally, and vice versa.

We suspect that the retention of this concern reflected not only a fear of change *per se* but also a more general fear of the unknown resulting from the sheer lack of firm details accompanying Sheffield City Council's announcements. This suggestion is important as psychological research indicates that perceived uncertainty can influence judgements of risk and decision-making processes (e.g. Hastie, 2001; Kahneman et al., 1982; Morgan & Henrion, 1990). Indeed, the uncertainty that existed within our sample might have served to amplify the perceived hazards associated with development resulting in greater levels of opposition (see Pidgeon et al., 2003).

Evidence exists to suggest that a key means of reducing uncertainty could be through discursive engagement with communities. Indeed, Renn (2003) suggests that such discussions provide "…a platform for the mutual exchange of arguments and thus a learning experience for developing respect for other viewpoints and tolerance for other moral positions" (p.400). As such, we would suggest that the retention of a fear of unwanted change within the target group adds to the mounting evidence that calls for the early and continued engagement of host communities in order to mitigate the potential of local opposition forming (Devine-Wright, 2005; Krohn & Damborg, 1999; Loring, 2007; Walker et al., 2005; Wolsink, 2007).

The results of the Section 4 (trust) analysis indicated that, for the target group, trust in Sheffield City Council was a positive predictor of attitudes. With respect to energy policy, this finding highlights the important role that trust might play increasing the acceptance of local proposals. The problem for developers is that

research tends to show that the public generally do not trust them (e.g. Bell et al., 2005; Cvetkovich & Löfstedt, 1999; see also Morris, 1994). Indeed, some observers suggest that local opposition might stem not from an objection to local development *per se*, but rather in response to having the wishes of 'outside' developers imposed upon them (e.g. Jobert et al., 2007; Loring, 2007). Thus, it would appear that for developers seeking to reduce the potential of disruptive local opposition, building trust with potential host communities should be considered a priority. Importantly, and consistent with the thrust of this article, research suggests that one of the key ways in which a climate of trust can be fostered is through responsive and fair engagement with host communities (e.g. Hagendijk, 2004; Lind & Tyler, 1988) and through encouraging local, co-operative ownership of projects (e.g. Breukers & Wolsink, 2007; Brunt & Spooner, 1998; Loring, 2007).

The results from the Section B (demographic) analysis indicate that whilst the demographic factors appear to make have little effect on attitudes within the comparison group; a belief in anthropogenic climate change and home-ownership amongst members of the target group were retained as predictors. The emergence of a belief in climate change as a significant positive predictor is encouraging as it indicates that discourse centred on this issue could be a means of increasing the acceptance of local wind development. That said, we would advise against a presumption that framing local wind development in terms of broader national or global need will necessarily be effective in combating locally-founded opposition (see also Breukers & Wolsink, 2007).

Research suggests that supporters and opponents of wind often think about development at different levels of abstraction (e.g. Bell et al., 2005; Devine-Wright & Devine-Wright, 2006; Krohn & Damborg, 1999). For example, Krohn & Damborg (1999) note that whilst opponents tend to focus on the specific problems with wind *turbines*, supporters tend to consider the broader benefits of wind *energy* (see also Simon, 1996). With respect to energy policy, this suggests that, to be most effective, arguments aimed at tackling opposition to local development should be tailored to suit the local context (i.e. made as locally relevant as possible). Thus, if a 'climate change mitigation' argument is to be used as a means of combating local opposition, then perhaps by demonstrating and quantifying (and making concrete) the likely negative impacts that climate change would have at a *local* level might be more effective than simply arguing on the basis of global requirement.

Finally, the finding that home-ownership was negatively related to specific attitudes was relatively unsurprising considering the retention of fears over house-price depreciation within the Section 3 analysis.

7. Conclusions

This research article used multiple regression analysis to establish the predictors of specific attitudes towards proposed local development in Sheffield, UK. The primary aim of the research was to identify (and better understand) the caveats that host communities place upon their acceptance of local wind developments and analysis of the results accompanying this study would suggest that this research was successful in achieving this aim.

Important amongst the findings was the extent to which general attitudes were predictive of attitudes towards development on the identified sites. This finding confirmed from the outset that the opposition displayed by the target participants could not be attributed solely to selfish considerations of personal utility (i.e. NIMBYism). Indeed, when controlling for general attitude, very few of the items retained as predictors of specific attitude could meaningfully be construed as evidence of such concerns. Perhaps the only item nearing such a classification was the retention of the threat of house price depreciation within the target group; however, the retention of this item within the comparison group would suggest that such concerns are not unique to those living in the vicinity of potential onshore wind developments.

Thus, at a basic level, this research supports the literature that exists to question the use of NIMBY as a sole explanation of local resistance to wind development. More importantly, however, this research provides further insight into the kinds of issues that might actually motivate local opposition towards wind development; particularly in cases where sites are perhaps mooted rather than more firmly established. Indeed, it appeared that within our target population, it was a fear of change and the unknown (perhaps largely motivated by concerns over landscape damage), in combination with a lack of trust in the council and relative uncertainty over the levels of support within the local community, that was largely responsible for the gap in specific and general attitudes. We feel it likely that the retention of these predictors reflected the lack of firm details that existed concerning the proposals at the time of questionnaire distribution;

however, we also feel that they were perhaps symptomatic of the lack of broader public involvement prior to the announcement of the short-listed sites.[5]

In sum, the threat of climate change and the resultant energy legislation aimed at helping to mitigate this threat (e.g. Renewables Obligation [RO]), has placed energy developers under increasing pressures to develop and deploy renewable energy capacity. Whilst other renewable energy technologies remain underdeveloped and/or comparatively expensive, in some countries onshore wind turbines are now rivalling some traditional forms of generation (e.g. Ackermann & Söder, 2002; Jäger-Waldau & Ossenbrink, 2004). However, whilst the commercial viability of onshore turbines is surely attractive to developers, the threat of costly delays resulting from opposition within potential host communities is certainly less appealing.

Advances in offshore turbine technology should gradually alleviate some of the pressure on onshore locations (although one should not assume that offshore development is immune to locally motivated opposition, see Devine-Wright, in press; Haggett, 2008); however, the UK government see the substantial expansion of *both* on- and offshore capacity as key to hitting their legally binding renewable energy targets (DTI, 2007). This could regrettably increase the likelihood that developers will encounter siting controversy, unless viable ways of preventing and tackling opposition can be established.

Numerous studies now serve to highlight the important role that a community-centred approach to development could play in achieving these aims (e.g.

Graham et al., 2009; Gross, 2007; Jobert et al., 2007; Khan, 2003; Loring, 2007; Toke et al., 2008; Wolsink, 2007; Zoellner et al., 2008). Indeed, involvement of local communities both during planning phases and also post-construction (e.g. through part ownership of developments) has been shown to increase the likelihood of planning success (Devine-Wright, 2005). Further, by dealing intimately with host communities, developers not only stand to increase their credibility and trustworthiness (e.g. Hagendjik, 2004; Lind & Taylor, 1988), but are also provided with the opportunity to identify and deal with the specific concerns held by those communities; concerns that policies based upon the provision of national/global pro-wind argument or a misguided belief that all opposition is grounded in concern for personal utility might inadequately address (e.g. Breukers & Wolsink, 2007; see also Bell et al., 2005).

Above all, however, we suggest that it is important that developers and policy makers focus on clearly establishing the *specific* reasons why *specific* members of *specific* communities are opposed to *specific* developments. At a local level this can be achieved through early, continued and responsive engagement with host communities. However, in the interests of national policy, we perceive there is a need to commission national or regional surveys aimed at establishing the caveats that the public place upon their general support for onshore wind development in the UK. It is expected that such action might help to advise the selection of less controversial sites, thereby lessening the chances of opposition, increasing the speed and probability of planning success, and facilitating progression towards the ambitious renewable energy targets.

End Notes

1. It should be noted that the RO is an example of just one of several mechanisms that can be employed to facilitate the expansion of renewable capacity (e.g. Mananteau et al., 2003) and also that policy decisions regarding the expansion of renewable capacity have varied between countries (e.g. Reiche & Bechberger, 2004).

2. It should be noted that Sheffield City Council did not intend to personally develop renewable installations at any of the identified sites but rather offer the sites to suitable private developers.

3. The discovery of a small attitude gap within the comparison group should not be considered unusual. It must be remembered that the comparison respondents, although not living directly adjacent to any of the identified sites, were still resident in the north of Sheffield and might have had some affiliation to one or more of the target towns and/or identified sites. Such affiliation could explain a why some demonstrated a reluctance to allow construction in the target area despite harbouring a generally positive attitude to wind development.

4. The question as to what constitutes the 'correct information' is an issue in its own right. Pro-wind and wind-sceptic groups have been found to selectively represent the same issues in fundamentally different ways (e.g. Devine-Wright & Devine-Wright, 2006; Haggett & Toke, 2006).

5. It should be noted that within the scoping and feasibility study that Sheffield City Council commissioned, various stakeholders were consulted. However, this consultation was largely confined to wind developers, large land owners, industrial or governmental stakeholders and the Peak District National Park Authority (see Sheffield City Council, 2006).

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Appendix 1

Gender was an existing dichotomously coded variable (Male = 1; Female = 0). With respect to home-ownership; those who stated they either owned or were paying as mortgage on their home (*N* = 705) were classed as one group (1), whilst those who were renting or had some other housing arrangement (*N* = 91) were classed as a second group (0). With respect to employment; those who stated that they were in some form of paid employment (*N* = 541) were included in one group (1), whilst retired people, students, homemakers and those seeking work (*N* = 268) were included in another group (0). With respect to belief in climate change; those who believed in anthropogenic climate change (*N* = 576) were classed as one group (1), whilst those who did not believe in anthropogenic climate change or who were unsure (*N* = 228) were placed in a second group (0). With respect to conservation/environmental group membership; those respondents who noted affiliation to one or more recognised organisations (*N* = 65) were classed as one group (1), whereas those who expressed no such affiliation (*N* = 739) were classified as a second group (0). With respect to FoF; those respondents who noted having friends of family living near to existing developments (*N* = 94) were classified as one group (1), whilst those who noted that the new of no relatives or friends living near an existent development or who were unsure (*N* = 706) were classified as a second group (0).

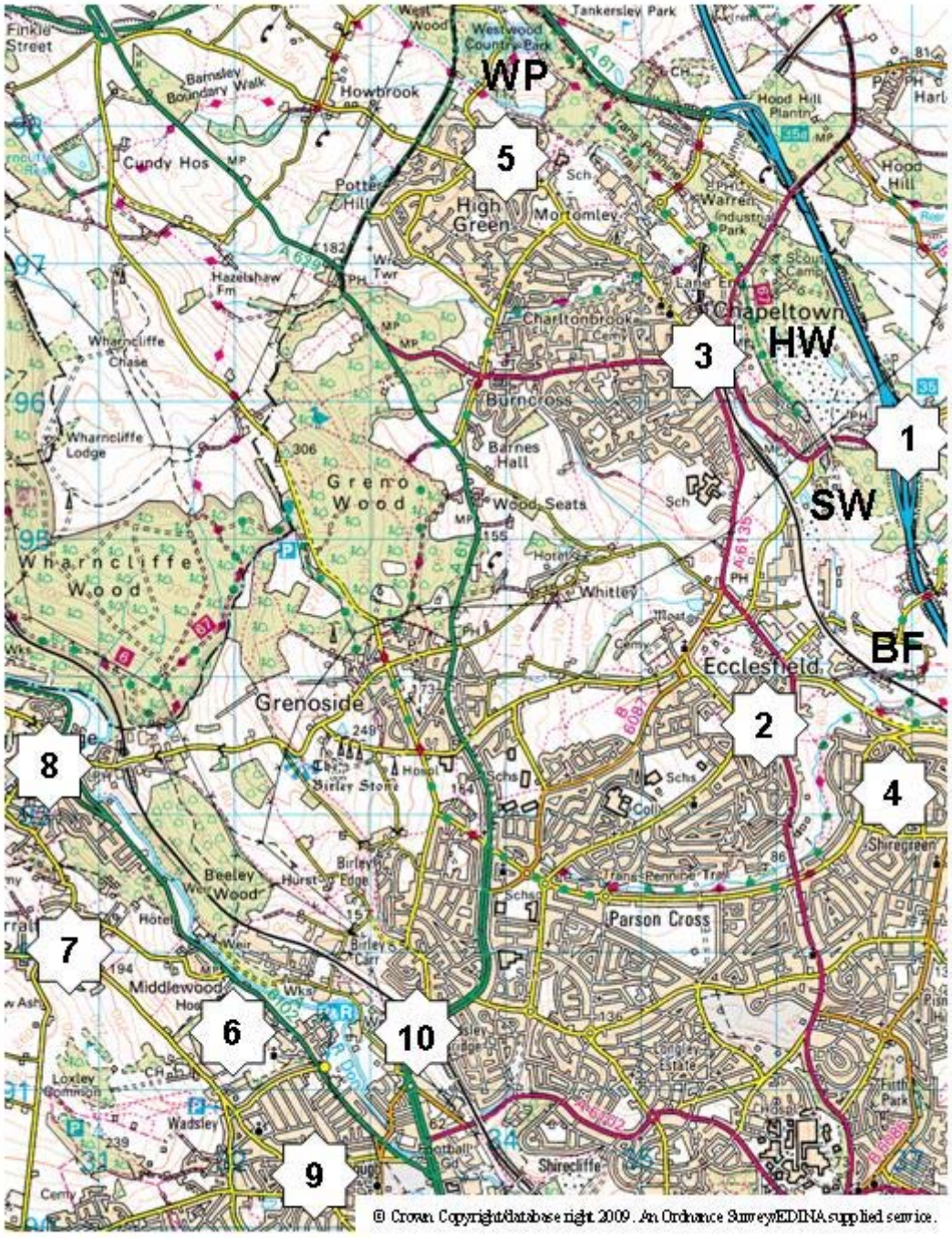

Fig 1. The locations of the four identified sites and the 10 target and comparison towns selected for questionnaire distribution (Scale: 1:50 000). ***Identified Wind Farm Sites:*** Westwood Country Park (WP); Smithy Wood (SW); Hesley Wood (HW); Butterthwaite Farm (BF). ***Target Towns:*** (1) Thorpe Hesley; (2) Ecclesfield; (3) Chapeltown; (4) Shiregreen; (5) High Green. ***Comparison Towns:*** (6) Middlewood; (7) Worrall; (8) Oughtibridge; (9) Hillsborough; (10) Birley Carr. Note: Towns were selected so as to sample a broad range of SES groupings. All marked locations are approximate. The largest of the identified sites is Westwood Country Park which could accommodate up to a maximum of six turbines.

Table 1

Concepts investigated within each section of the questionnaire

Section	Concept
A	Introduction section outlining proposal to participants and offering instruction as how best to complete the questionnaire
1	Assessed respondents awareness of the proposals, interest levels in the projects and initial reaction to the announcements
2	Assessed opinions of some of the benefits that sometimes accompany wind developments
3	Assessed perceptions of likely risks/disadvantages that would accompany development on identified sites
4	Assessed extent to which respondents trusted Sheffield City Council to operate with transparency, fairness and due diligence when furthering plans for development
B	Demographics section assessing age, gender, employment status, ethnicity, voting preference, length of residency in distribution zone, belief in anthropogenic climate change, conservation group membership and relation to people living near to existing wind developments

Table 2

The mean general attitude, specific attitude and attitude difference score for the target and comparison groups

Mean	**Target (*n* = 414)**	**Comparison (*n* = 389)**
General Attitude Score	3.79 (0.92)	4.04 (0.71)
Specific Attitude Score	3.30 (1.25)	3.86 (0.85)
Difference Score	+ 0.50 (0.98)	+ 0.18 (0.67)

Note: The difference score was calculated by subtracting specific from general attitude.

Table 3

Hierarchical regression analysis of the Section 1 items; dependent variable: specific attitude controlling for general attitude.

	Target Group (n = 413)			**Comparison Group** (n = 388)		
***R^2 change*:**	.15, p < .001			.03, p < .001		
Independent Variables	***ß***	***t***	**Sig.**	***ß***	***t***	**Sig.**
General attitude	***.48***	***13.29***	***< .001***	***.62***	***16.05***	***< .001***
Perceived community opinion	**.41**	**11.29**	**< .001**	**.17**	**4.32**	**.001**

Method: Enter (Step 1: general attitudes; Step 2: other perceived community opinion) (significant results are in bold).

ß: standardised beta coefficient.

Items: Respondents asked whether they felt that other members of their local community would be in favour of, or against, development on the identified sites (1 mostly against – mostly in favour).

Table 4

Hierarchical regression analysis of the Section 2 items; dependent variable: specific attitude controlling for general attitude.

	Target Group (n = 406)			**Comparison Group** (n = 381)		
***R^2 change*:**	.22, p < .001			.11, p < .001		
Independent Variables	***ß***	***t***	**Sig.**	***ß***	***t***	**Sig.**
General attitude	***.32***	***8.34***	***< .001***	***.50***	***12.44***	***< .001***
General economic benefit	**.30**	**6.84**	**< .001**	**.15**	**3.44**	**< .001**
Community trust fund	**.10**	**2.21**	**.028**	.08	1.59	.113
Low-carbon package	.03	0.70	.488	.09	1.76	.082
Educational package	.03	0.59	.557	.03	0.67	.504
Opportunity to invest	**.13**	**3.12**	**< .001**	.01	0.28	.778
Cheaper electricity	**.13**	**2.59**	**.010**	.07	1.39	.165
Microgen for community	-.02	0.47	.642	-.01	0.13	.900
Employment opportunity	-.01	0.11	.911	**.09**	**1.97**	**.050**

Method: Enter (Step 1: general attitudes; Step 2: other items) (significant results are in bold).

ß: standardised beta coefficient.

Items: Respondents asked how attractive each of the listed would be to local communities (1 not attractive – 4 extremely attractive). General economic benefit featured as separate question; respondents asked if they felt that wind development brings economic benefits to host communities (1 definitely no – 5 definitely yes).

Table 5

Hierarchical regression analysis of the Section 3 items; dependent variable: specific attitude controlling for general attitude.

	Target Group (n = 406)			**Comparison Group** (n = 385)		
***R^2 change*:**	.28, p < .001			.07, p < .001		
Independent Variables	***ß***	***t***	**Sig.**	***ß***	***t***	**Sig.**
General attitude	***.28***	***7.48***	**< *.001***	***.48***	***10.10***	**< *.001***
Cause noise	-.06	1.88	.062	-.03	.75	.454
Spoil the landscape	**- .23**	**5.14**	**< .001**	**- .11**	**2.10**	**.038**
Take up space	.05	1.14	.255	.02	0.49	.624
Kill birds	.06	1.48	.141	-.05	0.98	.327
Lower house prices	**- .14**	**3.37**	**.001**	**- .15**	**3.16**	**.002**
Interfere with TV reception	-.01	0.17	.867	.03	0.61	.540
Harm the tourist industry	-.04	0.94	.347	.00	.078	.938
Distract motorists	-.05	1.31	.191	-.29	-0.29	.774
Interfere with aircraft radar	.01	0.15	.885	.07	1.46	.144
Construction disruption	-.03	0.76	.446	.00	0.08	.940
Increase crime levels	-.01	0.25	.803	-.05	-1.01	.315
General unwanted change	**- .33**	**7.01**	**< .001**	-.07	-1.40	.162
Hazardous to health	.08	1.90	.058	-.05	-0.97	.333

Method: Enter (Step 1: general attitudes; Step 2: other items) (significant results are in bold).

ß: standardised beta coefficient.

Items: Respondents asked how likely wind development on the identified sites would cause each of the listed negative consequences (1 very unlikely – 5 very likely).

Table 6

Hierarchical regression analysis of the Section 4 items; dependent variable: specific attitude controlling for general attitude.

	Target Group (n = 411)			**Comparison Group** (n = 387)		
***R^2 change*:**	.04, p = .001			.01, p = .084		
Independent Variables	***ß***	***t***	**Sig.**	***ß***	***t***	**Sig.**
General attitude	***.55***	***13.91***	***< .001***	***.63***	***16.16***	***< .001***
Trust	**.22**	**5.56**	**< .001**	.07	1.73	.086

Method: Enter (Step 1: general attitudes; Step 2: trust) (significant results are in bold).

ß: standardised beta coefficient.

Items: 'Trust' is a composite variable of the six trust items included within the survey. Originally respondents were asked whether they trusted Sheffield City Council to (i) seek local opinion; (ii) take local opinion into account; (iii) keep residents views at heart; (iv) keep locals informed; (v) tell truth about any risks; (vi) act fairly when choosing a final site (1 definitely no – 5 definitely yes).

Table 7

Hierarchical regression analysis of the Section B items; dependent variable: specific attitude controlling for general attitude.

	Target Group (n = 403)			**Comparison Group** (n = 379)		
***R^2 change*:**	.05, p = .001			.01, p = .770		
Independent Variables	***ß***	***t***	**Sig.**	***ß***	***t***	**Sig.**
General attitude	***.58***	***14.60***	***< .001***	***.64***	***15.45***	***< .001***
Gender	-.04	1.05	.293	-.03	0.62	.532
Age	-.09	1.70	.090	-.06	1.10	.273
Length of residency	-.03	0.56	.573	.03	0.63	.532
Home ownership	**-.10**	**2.58**	**.010**	.00	.041	.967
Employment status	.00	0.01	.996	-.01	0.20	.843
Belief in climate change	**.12**	**2.88**	**.004**	.06	1.39	.164
Conservation group member	-.03	0.72	.470	-.02	0.36	.723
FoF	.009	0.24	.814	-.04	0.91	.364

Method: Enter (Step 1: general attitudes; Step 2: other items) (significant results are in bold).

ß: standardised beta coefficient.

Items: Gender, Age, Home-ownership, Employment status, Belief in anthropogenic climate change, Conservation group membership, and FoF were all dichotomous variables (0-1). Age and Length of residency were continuous variables.