

ESRC Environment and Human Behaviour: New  
Opportunities Programme

**Tilting at Windmills? The Attitude-  
Behaviour Gap in Renewable Energy  
Conflicts**

**Full Report of Project Results**

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## **Objectives**

This project was part of the ESRC's Environment and Human Behaviour New Opportunities Programme. As such, it has objectives in accordance with those of the Programme.

The core objectives of the Programme were to seek insights and avenues for further research into the following questions:

1. Why do people behave as they do towards the natural environment?
2. How do or will people seek to adapt their behaviour in response to environmental change, especially rapid environmental change?
3. What public policy approaches might persuade people to change their behaviour, either to mitigate the extent of negative environmental change, or to adapt to it in ways that do not exacerbate it, and to change their behaviour in ways that are least costly for society as a whole?

This project therefore sought to understand behaviour towards the environment, changes in this, and the relevant policy implications and measures. The aspect of behaviour and the environment that this project focussed on was conflicts over renewable energy sitings, particularly windfarms. It considered the apparent gap between attitudes and behaviour; while there is high support for renewable energy, when a windfarm is planned in a particular location it is very often met with vocal and vociferous opposition. This project aimed to understand why.

In more detail therefore, the aims of the project were:

- (i) to synthesise current understanding from different disciplinary perspectives of the human attitudes and behaviours exemplified by wind energy controversies
- (ii) to begin to develop new theoretical and conceptual tools to extend that understanding
- (iii) to devise new research questions and new methodologies that involve novel links between previously unconnected or loosely connected disciplines
- (iv) to begin to inform public policy on these issues.

This report will now detail how these objectives were achieved.

- (i) to synthesise current understanding from different disciplinary perspectives of the human attitudes and behaviours exemplified by wind energy controversies

To do this, the project brought together a variety of different disciplines. These were geography, politics, sociology, social psychology, environmental psychology, discursive psychology, planning, economics, environmental economics, and environmental management. It was designed to review the different approaches, theories and research that exist within this range of disciplines; drawing out commonalities between them; and develop informed research directions and designs based on these. The methods used in this research included disciplinary research reviews drawing on theories and published studies, and interactive participant workshops. These involved the multi-disciplinary team reviewing and dissecting the human attitudinal and behavioural issues embedded in the windfarm issue, mapping out a preliminary understanding of the issue from their own disciplinary perspective,

and developing new avenues for research. More details of this synthesis is given in the 'Results' section of this report.

- (ii) to begin to develop new theoretical and conceptual tools to extend that understanding
- (iii) to devise new research questions and new methodologies that involve novel links between previously unconnected or loosely connected disciplines

As the work of the project developed, these two aims became interlinked with each other. Developing new ways of thinking on the issues led to theoretical and methodological links have been made between disciplines. These occurred through the interactive workshops, working papers written by each partner, and discussion and feedback on them. More detail of these links is given in the 'Results' section.

While these objectives were achieved, and links between disciplines have been made, a number of considerations of conducting multi-disciplinary research arose during this project that future projects may find useful to consider.

The first of these concerns terminology. While 'attitudes' and 'behaviour' may seem like straightforward terms, they have precise and different definitions in different disciplines. This has implications not only for the workings of the project, but for the conceptualisation of any gap between them.

One of the first points to be made in relation to this is that definitions and understandings vary within disciplines as well as between them. A discipline such as psychology for example is very broad and contains sub-disciplines that may have different foci. In sociology too there is considerable difference between the view of attitudes adopted in quantitative statistics and in a grounded theory or discourse based approach. Sometimes these inter-disciplinary differences are made explicit; discursive psychology was developed for example in direct opposition to a cognitive approach to attitudes and their measurement. Other times, the differences may only become apparent through efforts to understand them.

In terms of this project it became apparent therefore that there are significant differences in terminologies, both in terms of different meanings of the same word, and different concepts (both within and between disciplines). This had a number of implications. It became clear that keeping definitions close at hand is key. Words that may have a common sense meaning may actually incorporate substantial elements within them that need to be referred to.

Areas of common ground and variation were highlighted in the project. For example, there is agreement that attitudes are evaluative, that they influence behaviour, and that values underlie this process. The clearest differences are between economics and the other disciplines in the project, which has a different view of attitudes, behaviour, and value. How far this matter depends on what future collaborative work is intended. Future research must consider, for example, if sociological or psychological research is to be used to identify variables to build into a model to be tested, can issues of terminology be circumvented? And does it matter if they are?

Furthermore, issues of terminology have implications for considering 'the gap' between attitudes and behaviour. It became clear through considering terminology that whether there is a gap or not depends on how these concepts are defined.

There can only be a gap between an individual's attitudes and behaviour if these are defined in very specific ways; that an attitude is a declared intention to behave in a certain way, and behaviour is a measurement of that intention being carried out.

The second issue that this project considered was the extent to which principles of each discipline being compromised when bringing them together. Disciplines are different precisely because they have fundamentally different bases and principles. Sociology and psychology are in many ways diametrically opposed. As has been mentioned, the branch of discourse analysis represented in this project is fundamentally different from psychology, and developed in direct opposition to it. Discursive psychology methods can be used to explore issues that other disciplines have highlighted – such as decision making in planning; is this a useful approach, or a compromise of disciplinary principles? Future research must consider whether inter-disciplinary research is a good and valuable way of proceeding, or means compromising, misinterpreting and mis-using the methods.

This was an ambitious project that brought together a diverse number of disciplines. The fact that it did manage to generate cross –disciplinary understandings and consensus is a considerable achievement. The theoretical and methodological links that were made between disciplines will be more fully considered in the 'Results' section.

(iv) to begin to inform public policy on these issues.

The project has reached a number of conclusions about the reasons for conflict, how these might be mitigated, the assessment of attitudes and behaviour, and the nature of any 'gap' between them. These are being disseminated through publications, conference presentations, and contact with research users. More detail on how these objectives were met is given in the 'Results' section of this report.

## **Methods**

This project was not a conventional research project, and carried out only a limited amount of empirical research; more details of this work will be given shortly. The focus of the project was on bringing together the theoretical and methodological insights from a number of different disciplines to better understand renewable energy conflicts. The crux of the project was therefore a series of interactive workshops in which project members presented their disciplinary perspectives, which were then discussed.

In more detail, the structure of the workshops was as follows:

Workshop 1 (June 2003): This set the scene, brought all members up to speed with the relevant aspects of the UK planning system, the development of windfarms, and the wider energy context. It was also an opportunity for members to begin to highlight areas of theory and concepts from their disciplines that are relevant to the research questions.

Workshop 2 (September 2003): The second workshop consisted of presentations by participants of working papers on their initial approach to the questions that have been posed. These papers were circulated amongst group members and after presentations they formed the basis for some very fruitful discussions, with a number of commonalities and potential areas for overlap, synergy and collaboration being identified.

Workshop 3 (December 2003): A 'witness session', where a councillor, a wind energy developer, and a local protester all involved in a windfarm application were invited to address the project members and answer questions. Transcripts of these sessions were made, and partners each produced their disciplinary comments and feedback on them.

Workshop 4 (February 2004): This workshop consisted of drawing together the feedback to this common data source. Issues around bringing the different disciplines were discussed, the common themes redefined, and areas for future interdisciplinary work highlighted.

There were plans for a fifth workshop to discuss project outputs. This meeting has been postponed until September 2004. There are currently plans to write a book based on the project, with project members each contributing a chapter. By September, plans will be further developed with the publisher, and this will enable a more fruitful meeting. Project members will also be discussing plans for further research, based on the work of the project.

Other work fed into and supported these workshops. A comprehensive literature review was carried out on the factors that may influence conflicts around renewable energy siting. This focused on whether such opposition is best understood in terms of deficiencies in the regulatory and planning system, or in terms of unfavourable public attitudes. In terms of the public, a number of theories of attitudes and behaviour were considered, most notably that of 'nimbyism', which is surprisingly widely used still in both common parlance and the research literature. However, evidence from several empirical studies cast doubt on this as an explanation for opposition, and cross national comparisons highlighted the complexity of the issues and the necessary focus on the interaction between people and planning; this may be in terms of such things as communication, involvement, and ownership. A second literature review relating to offshore wind energy was also carried out, highlighting that while offshore may be seen as the answer for the problems of onshore development, many of the same kinds of issues will also be encountered. The references from these reviews have been entered on a common database. This was one of the features of the project website which was set up to facilitate communication.

There has been some empirical work as part of the project. A number of sources of data have been generated and collected, which were then analysed using discursive psychology. The results of this research demonstrated the different rhetorical strategies that those involved in wind energy conflicts use, and highlighted the complexity of the issue. It explored the apparent gap between attitudes and behaviour by considering how the claims made about wind energy constitute that conflict, and how proponents present their particular version of it.

## **Results**

This project had three main aims. This section of the report will consider the results of the project in terms of meeting these aims.

(i) The first aim was to synthesise current understanding from different disciplinary perspectives of the human attitudes and behaviours exemplified by wind energy controversies. From the discussions of this project, a framework for conceiving attitudes and behaviour to renewable energy has been developed. Rather than assuming that there is a gap between them because of the apparent high support

and yet local opposition, this project has instead asked whether there is a difference between attitudes in theory and reality. Drawing on previous research, it has been noted that attitudes may be held, for example, about renewable energy in general. These may then change when the contingencies of an actual development are faced. This may lead behaviour towards it to differ from the original attitude. The project has drawn together a number of interlocking factors that will affect this relationship, and attitudes and behaviour towards a particular proposal; these will be briefly detailed.

### Local and global

Wind energy conflicts epitomise the disjuncture between the local and the global. So, while issues of *global* warming may be far removed from everyday life, a fear of house prices falling because of a local windfarm is not. Local people have a knowledge and understanding of their area, and have very real concerns if they believe their lives will be adversely affected. If these concerns are not taken seriously they can lead to local opposition. The disciplines in the project have highlighted that while there may be national and international benefits from a reduction in the use of fossil fuels, the proportional reduction in CO<sup>2</sup> emissions for each person who lives near a wind farm may be a small and intangible compensation.

### Ownership

Related to this are issues over who owns and controls any development, the local people, or companies from outside the community who may be perceived as exploiting it. Cross national comparisons have been useful here to highlight the effect that financial involvement and even a management stake in a windfarm may have on its acceptance within a local area. This ties into other factors, such as local and national benefits and disbenefits, and the imposition of a development on a community by 'outsiders'. Furthermore, heavy-handed techniques to educate and persuade people of the benefits of a 'necessary' development may not help. In fact, they are more likely to incite protest than overcome it. Developers may espouse environmental values but are suspected of profiteering. Ultimately, people may not be against the turbines, but against those who want to site them.

### The importance of 'place'

It is crucial to consider the importance of 'place', the local social and historical context of an area, and the attachment that people have to their local environment. Views are developed in the context of immediate surroundings, and any changes to this are a perceived threat to identity. The social landscape has meaning attached to it beyond just amenity or economics. For example, which 'local people' protest against a wind farm? They could be long standing residents or incomers to an area. This may alter their particular conception of the local landscape; is it for leisure or economic development? A rural idyll or a livelihood? The value that a locality has or is perceived to have will determine how developments are viewed. Different disciplines have emphasised the meaning that places have for people.

### Landscape impacts

Protest may manifest because of the perceived impact on the site in which the turbines are planned. It may be because that landscape is particularly and innately valuable, rather than because it happens to be local, that forms the basis of concern.

These conflicting environmental aims are an interesting characteristic of renewable energy conflicts. While on one hand such developments are good for the planet, they also have their own environmental consequences. Can these be justified? And who decides? The specifics of a development will also be significant here – how many turbines are planned, how tall will they be, and what will the layout and design be like? Answers to these questions will shape responses to any particular scheme.

Further, cross national comparisons are relevant here. This project has raised questions such as the impact of the quality and type of landscape; for example, might it be the case that the landscape is less differentiated and valued in somewhere such as Denmark, and are people therefore less concerned about how turbines might impact upon it? Is it the case that perceptions of landscape and its value differ, for example, in Spain to the UK? And what effect does this have? Such questions have highlighted areas for further research that will be more fully detailed shortly.

### Degree of consultation

A final theme that has arisen concerns the nature of the planning system, and the importance of understanding how this affects the decisions that are made and the formation of opposition. It is clear that planning practices and processes are important in understanding the outcomes of disputes. For example, the planning system needs to be considered in terms of the way it operates, and the communication, negotiation and participation that it allows. This leads to a consideration of the kinds of collaborative and participatory processes and techniques necessary to contribute to an institutional framework that draws in a group of participants and allows them to express their views. A common theme then is of increased public participation. But questions have also been asked about what happens if the public are involved, and the 'right' decision is not reached? Furthermore what happens if the call for enhanced participation does not follow through into action? Comparative research from the continent highlights the importance of involving people in the process – but this has to be done meaningfully. If people are consulted, are they actually listened to? Is what they say taken into account? Essentially, these are all important issues about the transparency of the process. Questions have also been raised across disciplines about who has the opportunity to have an input into the system, and how the 'public interest' is defined and used. The point has also been made that the power differentials may still remain between people and decision makers despite whatever efforts are made to compensate for them. There is a need to understand the process and how it is managed. Issues about decision makers, trust between them and the public, the relations between majorities and minorities in decision making, and the manifestation and exercise of power are key.

(ii) The second aim was to devise new research questions and new methodologies that involve novel links between previously unconnected or loosely connected disciplines. This project has identified a number of novel links between disciplines that could be used to address some of these common thematic links that have already been detailed.

The first way this can be considered is for theoretical positions from one discipline to be examined by using methods from another. For example, the emphasis in geography on the way that different people understand and treat information in different ways in defining 'problems' could be examined by a discursive psychology (DP) approach. DP could consider how this is achieved, and how officials persuade

local people that their information is free from bias, and the other tools that they use to build up and maintain their legitimacy. Close rhetorical analysis could also take place of the methods and devices that protesters used in their arguments, and how they presented themselves as not having a personal stake in this issue for example. This might be particularly relevant where protesters do not wish to be accused of 'nimbyism', and could also be used to examine how they manage their 'guilt' at opposing what is ostensibly a public good.

The idea from political philosophy that opposition to windfarms may actually represent qualified support for wind energy could be developed by interviews to allow people to reveal more of their opinions, or by case study experiments. These could be carried out using psychological or sociological methods. Methods from sociology or psychology could also be used to examine the relationship between active opposition and support, the views of the public during the planning process, and outcomes. Careful comparative case studies informed by interviews with protagonists might provide useful insights into the relative importance of different factors in determining levels of opposition to particular developments. Such research could also help to understand the major factors that contribute to any 'social gap', or the possibility that opposition to windfarms is from a vocal minority only, and the appropriate responses to it.

This project has also explored the possibility of linking different methods together, and developing methodological triangulation. This might take the form of findings from one dataset enhancing understanding of another, such as a range of survey results contextualised by greater depth of interviews and ethnography. It is of course important to remember that triangulation has to be used cautiously, as multiple methods could merely multiply error, and would not themselves lead to better or more rigorous study. However, using methods in combination can be a way of utilising the advantages that they all have, and working to minimise some of the disadvantages.

There are examples of where this might be appropriate. Economic models might provide a sparse framework that could be enhanced by data or concepts from other disciplines, or could be used to explain areas in other research that could not otherwise be addressed. Factors and variables could be built into the model, and research from other disciplines, such as sociology or social psychology, could suggest what these variables might be. Similarly, approaches such as willingness to pay can be seen as a form of intention formation, a way that individuals orient to action. The translation of people's choices into action is crucial, and has not been fully considered yet by economics; this is where psychology could enhance this approach.

(iii) The third aim was to begin to inform public policy on these issues. The political expediency of the research topic is clear; thus the need for developing an understanding of renewable energy conflicts, and informing policy about them, is key.

The Government's response to global warming, climate change and Kyoto has led to a new emphasis on renewable energy, and particularly on wind energy. The Energy White Paper, published in February 2003, set a target of the UK generating 10% of its electricity from renewable sources by 2010, and an aspiration that this should reach 20% by 2020. Cuts of 60% in carbon dioxide emissions were targeted for 2050, which will require that at least 30-40% of electricity be derived from renewable sources. To reach these ambitious targets, the emphasis is very much on wind power. Of all the renewables, wind is the most technically advanced, and policies,

such as the revised Planning Policy Statement 22, are in place to back it up. Yet half of all windfarm applications are rejected.

The factors that this research has highlighted have directly addressed why this might be. Developments have an impact locally and bring disadvantages and disruption; their benefits are rarely felt at a local level. National and international companies developing in a particular area may be felt to be exploiting it. Education about the benefits of a development may not address the concerns that local people have. Further, there may be little possibility for them to engage in the planning or development process. They may lack information and a genuine opportunity to influence the particular design of the development. Factors such as these have to be taken into account when considering and planning developments.

Dissemination of these conclusions, with an aim to informing policy, has been taking place and is ongoing. More details of this will be given now.

### **Activities**

A number of publications and working papers have been prepared. These will be detailed shortly. A conference presentation has also been made:

Haggett, C. and Smith, J.L (2004) 'Tilting at windmills? Using discourse analysis to understand the attitude-behaviour gap in renewable energy conflicts' paper given at the British Sociological Association Conference: York, March 22<sup>nd</sup> - 24<sup>th</sup> 2004

Several workshops as part of the Environment and Human Behaviour New Opportunities Programme have also been contributed to:

Haggett, C and Benson, J. F. (2003). *The Attitude-Behaviour Gap in Renewable Energy Conflicts: A Theoretical and Methodological Review*. ESRC Environment & Human Behaviour New Opportunities Programme, Second Workshop, Policy Studies Institute, London, 9-10 Dec 2003

Haggett, C (2004) *The Challenge of Onshore Windfarms and the Attitude-Behaviour Gap in Renewable Energy Conflicts* ESRC Environment & Human Behaviour New Opportunities Programme, Second Workshop, Policy Studies Institute, London, 20-21<sup>st</sup> May

Haggett, C (2004) *Change in Power Supply? Lessons from Wind Energy Conflicts* ESRC Social Science Week presentation, Policy Studies Institute, London, 23<sup>rd</sup> June 2004

### **Outputs**

There are a number of papers under review or in progress from this project:

Bell, D., Gray, T., and Haggett, C. 'Policy, Participation and the 'Social Gap' in Windfarm Siting Decisions'. Under review at Environmental Politics

Gray, T., Haggett, C., and Bell, D. 'Windfarm Siting – the Case of Offshore Windfarms' in preparation for Environment and Planning, to be submitted August 2004

Haggett, C. and Smith, J.L (2004) 'Tilting at windmills? Using discourse analysis to understand the attitude-behaviour gap in renewable energy conflicts' paper

given at the British Sociological Association Conference: York, March 22<sup>nd</sup> - 24<sup>th</sup> 2004

Further plans for dissemination include an edited book with contributions by the project partners.

A number of working papers have also been written by partners for the project:

- Armitage, C. and Spencer, C. (2003) '*The Attitude-Behaviour Gap in Renewable Energy Conflicts as seen from social and environmental psychology*' Project working paper
- Bell, D. and Gray, T. (2003) '*Policy, Participation, and the 'Social Gap' in Windfarm Siting Decisions*' Project working paper
- Chilton, S. and Metcalf, H. (2003) '*An Economic View of the 'Attitude-Behaviour' Gap with Respect to the Siting of Windfarms*' Project working paper
- Clear Hill, H. (2003a) '*Planning Principles and Procedures*' Presentation made at project workshop, University of Newcastle, 2<sup>nd</sup> June 2003
- Clear Hill, H. (2003b) '*Cross National Comparisons*' Presentation made at project workshop, University of Newcastle 18<sup>th</sup> September 2003
- Haggett, C. (2003a) '*Tilting at Windmills? The Attitude Behaviour Gap in Renewable Energy Conflicts: Literature Review*' Project working paper
- Haggett, C. (2003b) '*Offshore Wind: A Brief Review of the Literature*' Project Working Paper
- MacFarlane, R. (2003) '*Information in Planning and Opposition: a case study in renewable energy*' Project working paper
- Moffatt, S. and Haggett, C. (2003) '*A Sociological Approach to Questions about Siting and Living with Windmills*' Project working paper.
- Powe, N. (2003) '*Public Preferences for Windfarm Development: a Willingness to Pay Approach*' Project working paper
- Smith, J. L. and Haggett, C. (2003) '*Exploring the Attitude-Behaviour Gap from a Discursive Standpoint*' Project working paper
- Vigar, G. (2003) '*Researching Wind Energy Developments: Perspectives from Planning Theory*' Project working paper

## **Impacts**

One of the aims of the project was to begin to inform public policy on the issues surrounding siting conflicts. The findings will have implications and applications beyond the specific issue of wind energy and will also inform public policy on the degree to which policy can or should attempt to provide information, change attitudes, change behaviours, change policies and procedures or change incentives.

The organisation of the third project workshop, to which representatives of key interested groups in the wind energy debate were invited, has led to a number of key contacts being made and potential users of the research being identified. Inviting representatives to the workshop meant informing them about the project, and a number of planners and councillors from all over the North East have expressed interest in the project and in being kept informed of its progress and results. Members of wind energy companies and opposition groups have also requested to be kept informed of our project, and it has become apparent that the issues that are being engaged with in this project are key for stakeholders and groups who are involved in planning, government, or siting decisions.

### **Further research priorities**

This project has identified a number of potential avenues for further research. As detailed in the results section, interdisciplinary research could be applied to a number of the key issues that this project has raised.

For the targets on renewable energy to be met, there must be an understanding of why projects are met with opposition. This project has highlighted the factors that are significant. Further research could test these empirically and address such issues as:

- the impact of community owned windfarms on their acceptance locally
- the possibility and feasibility of community compensation to redress the local disadvantages suffered
- the importance of deliberation and participation of local people in the decision making process
- the effect of meaningful consultation and collaboration between local people and developers
- the importance of the local social, political and historical context of an area in which a development is proposed
- the relevance of global issues and their effect on opposition or support
- the constitution of the opposition, and what proportion of those effected they represent
- the views of the silent majority
- comparisons with Europe in terms of landscape impact; national and local social context; government policy; and planning processes.

Furthermore, while the focus here has been on the controversies surrounding wind energy, there are clearly both parallels and implications for the development of other clean, green energy sources. Preliminary evidence from the development of hydrogen, for example, indicates that the same issues are being played out in this different arena; people are concerned about their locality, risk feeling used by a large and remote corporation, and suffer disadvantages for the sake of a distant national good. There may or may not be a 'gap' between any one individual's attitudes and behaviour, but protest still exists for a number of reasons and is remarkably effective. Such issues have resonance with other siting controversies, or the development of other forms of infrastructure, but have particular relevance in the case of renewable energy. Indeed, these issues have to be addressed in policy if the Government's targets stand a chance of being met, and renewables are ever to make a significant contribution to energy supply in this country.