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Why we still don't understand the social aspects of wind power: A critique of key assumptions within the literature

Mhairi Aitken *

The Institute for the Study of Science Technology and Innovation (ISSTI), The University of Edinburgh, Old Surgeon's Hall, High School Yards, Edinburgh EH1 1LZ, UK

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ABSTRACT

The literature on public attitudes to wind power is underpinned by key assumptions which limit its scope and restrict the findings it can present. Five key assumptions are that: (1) The majority of the public supports wind power. (2) Opposition to wind power is therefore deviant. (3) Opponents are ignorant or misinformed. (4) The reason for understanding opposition is to overcome it. (5) Trust is key. The paper calls for critical reflection on each of these assumptions. It should not be assumed that opposition to wind power is deviant/illegitimate. Opposition cannot be dismissed as ignorant or misinformed instead it must be acknowledged that objectors are often very knowledgeable. Public attitudes and responses to wind power should not be examined in order to mitigate potential future opposition, but rather in order to understand the social context of renewable energy. Trust is identified as a key issue, however greater trust must be placed in members of the public and in their knowledge. In sum, the literature must abandon the assumption that it knows who is 'right' and instead must engage with the possibility that objectors to wind power are not always 'wrong'.

1. Introduction

This paper presents a critical review of the existing literature relating to public attitudes and reactions to wind power. It aims to show that this literature is underpinned by a number of assumptions which feed into one another and ultimately restrict the research which is conducted and findings that are reached. These assumptions are considered to be largely responsible for 'a lack of genuine understanding of the dynamics of public acceptance' (Devine-Wright, 2007, p. 10).

The five key assumptions which will be critiqued are:

1. The majority of the public supports wind power.
2. Opposition to wind power is therefore deviant.
3. Opponents are ignorant or misinformed.
4. The reason for understanding opposition is to overcome it.
5. Trust is key.

The paper will show how each of these assumptions has informed the next, and how each plays an important role within the wind power literature and ultimately influences planning and development practices. The literature is shown to take a largely uncritical approach in accepting and reinforcing each of these assumptions. It is therefore hoped that this paper will serve as a call for greater critical reflection within the literature.

Furthermore, the arguments presented here are of relevance not just to debates concerning the development of wind power, but also other energy technologies. The literature relating to public attitudes and responses to wind power is well-established and the assumptions identified within this literature have implications for how the technology is discussed in policy and practice fields. Ultimately it impacts on how the technology is developed and how opponents to its development are perceived and responded to. There are therefore lessons to be learnt and responded to in future debates around emerging energy technologies (i.e. new nuclear power plants, tidal power, etc.). For example, UK energy (and planning) policy is now embracing the prospect of a new generation of nuclear power plants. As a controversial energy technology – perhaps even more so than wind power – important questions remain as to how new deployment of this technology will fit into public life and how public opposition to developments will be perceived and responded to. There are important roles to be played by social scientists and the role of academic literature in informing and shaping policy and/or practitioner responses to members of the public should not be overlooked. The paper therefore presents insights into the limitations of an existing literature relating to public responses to one particular energy technology and the consequences which these lead to: In doing so it presents a

* Tel.: +44 0 131 650 6384; fax: +44 0 131 650 6399.
E-mail address: mhairi.aitken@ed.ac.uk

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warning of pitfalls which debates around other technologies should endeavour to avoid.

2. The majority of the public supports wind power

The literature concerned with public reactions or attitudes to wind power typically takes as its starting point the assumption that in all major wind power producing countries public support for wind power is high (e.g. Wolsink, 2000). To support this assumption it routinely refers to opinion poll data or the findings of surveys to suggest that public support for the technology is, in general, high (for example; Barry et al., 2008; Bell et al., 2005 among many others). Although there is some evidence to suggest that this may be true (see McGowan and Sauter, 2005; POST, 2007), within the literature references to opinion polls and other surveys are typically brief and do not provide details of the polls/surveys in question. For example, Devine-Wright (2005, p. 126) states simply that 'At a general level, there is strong public support, as evidenced by extensive international opinion polling since the 1970s'. The basis for the prevailing belief that the majority of the public supports wind power remains largely unsubstantiated within the literature and therefore it remains an assumption rather than proven 'fact'. Yet this assumption – although remaining unquestioned and consequently unproven – retains a central justifying position in many arguments.

Within the literature it appears to have become accepted knowledge that opinion polls show high levels of support for wind power (see for example Bell et al., 2005; Devine-Wright, 2005; Ek, 2005; Krohn and Damborg, 1999; Toke, 2002; Wolsink, 2000) yet a critical discussion of opinion polls is lacking. There is typically no discussion of important factors such as who commissioned the polls, how and when they were conducted, how the samples were selected, how the questions were delivered or how and by whom the answers were analysed. Importantly, the professed high levels of public support are taken as the starting point for many important arguments which have been made in this field. As will be discussed further below, numerous papers have endeavoured to explain the 'gap' between high support for wind power (identified through opinion polls) and opposition often experienced by particular proposed developments. However, attention is not given to explaining the strength of the conviction that majority support exists.

Cursory references to opinion poll findings serve to shield opinion polls from critical analysis. Findings are presented as 'factual' and accurate without any discussion as to how they came about. Yet, opinion poll data should not be taken to represent incontrovertible 'facts', and it should not be presumed that the methods employed in designing, conducting and analysing opinion polls are necessarily entirely objective. Subjective influences enter into every stage and responses do not necessarily accurately reflect public opinion(s). For example: 'Responses which are given within opinion polls depend on the questions which are asked (i.e. how they are worded and in what context)' (POST, 2007, p. 3). Just some of the issues to be considered when evaluating opinion polls include:

> What are the biases inherent in the process? Who commissions them and for what purposes? How knowledgeable and engaged are the polled? How are opinions formed and shaped by campaigns, media, etc? How reflective are those views of public opinion?(McGowan and Sauter, 2005, p. 2)

Through its straightforward references to opinion poll data the literature exhibits its 'unreflectively positivist' approach (Ellis et al., 2007, p. 536). Furthermore, the literature demonstrates a selective approach to citing the findings of polls. For example, whilst it is habitually asserted that polls show high support for wind power, it is not typically acknowledged that recent polls have shown a (albeit slight) decrease in public support for wind power along with an increase in public opposition to wind power (BWEA, 2006; McGowan and Sauter, 2005). Passing references to opinion poll data suggest that polls provide non-controversial and unambiguous results and hence overlook the divergent data which exists. They simultaneously overlook the variety of subjective influences which may play roles in shaping the processes and results of polls and suggest that opinion polls provide 'facts' requiring no deconstruction or analysis.

However, regardless of how rigorously polls are conducted or how critically they are evaluated and interpreted they remain contentious as a method for examining public attitudes and responses. Indeed, Ellis et al. (2007, p. 540) contend that as 'the most popularly deployed methodology, the opinion poll, has contributed to the impasse in understanding public perception of wind farms'. Recent studies have drawn attention to the value of qualitative methods for exploring how energy technologies are perceived and experienced by members of the public and illustrating the complexities of public attitudes and responses. For example, Parkhill et al. (in press) have observed 'a transitory quality' to local public acceptance of nuclear power plants and noted that public attitudes are not stable but rather adapt and change in relation to events or changing situations. Opinion polls can only provide a snapshot of public opinion and are unable to reflect the dynamic, changing character of public opinions. Thus, as Devine-Wright (2005, p. 135) notes, qualitative methods are better suited for 'investigat[ing] how turbines are symbolically represented across different social groups, within and across communities'. Rather than relying on brief citations of opinion poll data the literature ought to base its central arguments on more detailed, qualitative analyses. This is essential for understanding how opinions change over time and how geographical, temporal, socio-political or cultural contexts influence and alter public responses (as has been demonstrated by Bickerstaff, 2004 and Henwood et al., 2008). Public opinion should not be presented as something static which can be measured once, but rather as highly flexible, transitory and adaptable.

3. Opposition is deviant

As a direct effect of this first assumption, the vast majority of the literature relating to public attitudes and reactions to wind power is centrally concerned with explaining why, given the perceived high levels of public support for wind power, implementation of the technology is problematic. Gross (2007, p. 2728) suggests that 'A fundamental question is why there can be strong local opposition to wind farms when there is a high level of public support for renewable wind energy'. Similarly, a paper by Bell et al. (2005) opens with the following sentence:

> If approximately 80% of the public in the UK support wind energy, why is only a quarter of contracted wind power capacity actually commissioned?(Bell et al., 2005, p. 460)

It has been contended that new wind power developments are becoming ever more difficult to realise and this is frequently attributed, at least partly, to localised public opposition to such developments (Barry et al., 2008; Bell et al., 2005; Devine-Wright, 2007, Ellis et al., 2007; Peel and Lloyd, 2007). Breukers and Wolsink (2007, p. 2738) maintain that 'Wind power projects are increasingly confronted by local opposition which delay or block implementation despite the fact that the level of general public support for wind energy is high and stable'.

In examining public attitudes and reactions to wind power the literature typically focuses on opposition to wind power (Ellis et al., 2007). Following on from the assumption that the majority of the public supports the development of wind power this opposition is positioned as deviant. The first assumption about public attitudes informs how opposition is perceived but is not robustly justified. Thus, significant attention is paid to why, given that the general public is presumed to be supportive of the development of wind power, certain members of the public object to particular wind power developments. 'The logic that has often been applied to explain this phenomenon is that it represents an 'attitude–behaviour gap' which suggests contradictory values amongst the public' (Ellis et al., 2007, p. 519).

These two initial (and dominant) assumptions – that the majority of the public support wind power, and that opposition is therefore deviant – encourage simplistic examinations of public responses to wind power. The literature implicitly (and at times explicitly) positions opposition to wind power developments as deviant and therefore as less legitimate. It encourages researchers to consider opponents to wind power simply in order to overcome them, rather than to learn from them or incorporate their views. The implications of this will be discussed further below.

A prominent example of this effect is the now widely discredited Not-In-My-BackYard (NIMBY) explanation. According to NIMBY explanations of opposition to wind power developments individuals or communities 'favour wind power as an abstract concept but oppose wind power projects in their area' (Warren et al., 2005, p. 857). NIMBY explanations presume that individuals opposing particular wind power developments would ordinarily be supportive of wind power as a general concept. This is directly connected to the assumption that the majority of the public supports wind power and very clearly illustrates the assumption that opposition is deviant.

In order to be considered a 'true' NIMBY one must possess a 'combination of free rider preferences and a positive attitude toward wind energy' (Wolsink, 2000, p. 53). However, Wolsink (2000) argues that this combination is rarely found. Instead, he notes that 'Most people with NIMBY-feelings are not so much in favour of wind power at all. Their behaviour is primarily based on their lack of support for wind turbines anywhere' (Wolsink, 2000, p. 54). Wolsink argues that the NIMBY paradigm 'misses the multitude of underlying motivations' for public opposition to wind power developments (Wolsink, 2000, p. 57). Similarly, Devine-Wright (2005) points to various 'independent variables' which influence how perceptions of wind power developments are perceived—the existence of such complex variables highlights the inadequacy of NIMBY explanations. Such variables 'include physical, contextual, political, socio-economic, social, local and personal aspects and reflect the complex, multidimensional nature of forces shaping public perception' (Devine-Wright, 2005, p. 134).

Within the wind power literature a broad consensus has emerged that NIMBY explanations are insufficient to understand public attitudes and/or responses to wind power developments. However as Ellis et al. (2007, p. 520) note 'despite a large body of literature that undermines the concept of NIMBYism as a credible theoretical construct [...] the term continues to be given credence in academic and public discourse over wind farm conflicts, despite an absence of supporting evidence'. Furthermore, Burningham (2000) notes that the language of NIMBYism is widely used by parties involved in planning conflicts. Therefore it is important to note that the term has entered the vocabulary of actors involved in wind power controversies. As both Barry et al. (2008) and van der Horst (2007) have noted, opponents to wind power developments are often aware of the potential to be branded a "NIMBY" and therefore will seek to avoid being portrayed as such. This is important as it highlights the power of academic debates to feed into and inform attitudes relating to particular planning debates. This further highlights the importance of ensuring that the academic literature reflects on its own assumptions and interests as these can feed into policy and practice.

Two further examples of where opposition has been clearly presented as less legitimate than support is Krohn and Damborg's (1999) account of 'Yes-sayers' and 'Nay-sayers' and Ebert's (1999) depiction of supporters as more far-sighted than opponents. Ebert (1999, p. 45) contended that supporters 'know the environmental and community benefits of wind energy. These people have "equity" in such a project or believe there is a benefit to them and the community from a wind farm which can go beyond financial concerns'. Supporters are viewed as being aware of the benefits of wind power, and objectors are therefore implicitly cast as ignorant (this is a theme which will be returned to below).

Dichotomous categorisations of supporters and objectors are overly simplistic and of little utility. More balanced descriptions of wind farm opponents and supporters are provided by Barry et al. (2008), Ellis et al. (2007) and Bell et al. (2005). Barry et al. (2008) conducted a rhetorical analysis of documents written by both supporters and opponents of wind power and confirmed that:

> there are not two homogenous and undifferentiated discourses of "pro" and "anti" facing one another; but a (not unlimited) variety of pro- and a variety of anti-windfarm discourses, linked together in, and under, what may be termed as a "discursive coalition."(Barry et al., 2008, p. 92)

Similarly, Ellis et al. (2007), in their case study of one proposed offshore wind farm in Northern Ireland, illustrate a multiplicity of motivations and reasons behind the positions of both objectors and supporters. The following extract highlights the diversity of attitudes and approaches identified among objectors to the wind farm:

> while some objectors appear to oppose the project primarily over its specific location, others are more motivated over the very principle of wind farms. Furthermore, while some objectors are most concerned about potential visual impacts, others are motivated by a wider range of reasons, such as local economic concerns. There also appears to be a difference of timescales applied, with some objectors most concerned about long-term impacts, and others more focused on more immediate effects. In terms of process, some objectors appear more sensitive than others on how they are perceived by the wider public and while some objectors accept that both sides of the argument will resort to propaganda, others see this as a tactic used by the developers alone. A further difference amongst the objectors is the way they engage with the broader types of environmental discourse, with some stressing economic rationalism, while others engage in more aesthetic or emotive language(Ellis et al., 2007, p. 530)

Ellis et al.'s (2007) study, in common with that of Barry et al. (2008), also highlights similarities which exist between the rationales of individuals of opposing positions. As such these studies (Barry et al., 2008; Ellis et al., 2007) provide insightful accounts of the varying views of both objectors and supporters and highlight the numerous, often conflicting beliefs, experiences or values which influence and shape individuals' attitudes towards particular wind power developments (as well as to wind power in general). Previous studies (i.e. Devine-Wright and Devine-Wright, 2006; Woods, 2003) have also demonstrated that different groups interpret aspects of wind power (for example issues relating to intermittency, or to the 'fit' of a wind farm

within particular landscapes) in different ways so as to support their own position (i.e. in favour or opposition to wind power). As such, particular issues are interpreted in different ways to fit with particular arguments, and importantly this means that similar arguments are made by individuals who both support and oppose particular projects. Therefore, it is not possible to make simplistic assumptions about opponents or supporters of wind power developments or to view one as being inherently less legitimate.

4. Opponents are ignorant or misinformed

As noted above, it has often been assumed that opposition to wind power arises from ignorance of the benefits of the technology (e.g. Ebert, 1999). This is a view which stems from and perpetuates the underlying supposition that opponents are less legitimate than supporters. Such a view is also reflected within the well recited argument that greater experience of wind power leads to greater acceptance and consequently that negative opinions or reactions may be taken as reflections of ignorance or uncertainty (e.g. Strachan and Lal, 2004; Warren et al., 2005). For example, Krohn and Damborg (1999) contend that local community acceptance of wind farms typically increases once construction is completed and the wind farm is operational. There is some evidence to support this argument (e.g. Scottish Executive, 2003; Warren et al., 2005) and it has been suggested that 'the majority of people who live in a community close to a wind farm live quite happily with it' (Ebert, 1999, p. 46). A survey conducted by the Scottish Executive (2003) which examined local attitudes to wind farms in 'affected' areas found that whilst many people were concerned about issues related to the development of a wind farm in their local area, very few people actually experienced problems once it had been completed.

Within the literature it is frequently suggested that individuals who have had more experience of wind farms will also have more positive opinions of them. For example, it has been argued that 'People with no specific experiences with wind power believe that noise is louder than those who actually live beside turbines' (Krohn and Damborg, 1999, p. 955). Therefore, it has been suggested that involvement with, and knowledge of wind power developments increases public support and positive attitudes for them, in general as well as at particular locations. This is consistent with the findings of a study by Warren et al. (2005) which examined community reactions to proposed and constructed wind power developments in two localities in Ireland and Scotland. In accordance with Krohn and Damborg (1999), Warren et al (2005, p. 866) conclude that 'opposition to windfarms arises in part from exaggerated perceptions of likely impact, and that the experience of living near a windfarm frequently dispels these fears'.

Whilst such findings are usually reported to suggest that opponents' arguments are unfounded, and hence are used as means of undermining opponents' legitimacy, there are a number of possible alternative explanations. For example, having been defeated people may feel that they are not able to further oppose the wind farm. Wolsink (2000) noted that individuals who do not have confidence in their ability to effect change are less likely to take action and this provides one possible explanation for the disintegration of opposition to wind farms once construction is completed. Moreover, one should take care not to suggest that opposition expressed towards proposed wind farms will necessary fade away after construction and hence that it is illegitimate, misplaced or inconsequential. This would be a dangerous stance to take and could justify the marginalisation or disregarding of opposition voices which must be allowed to be expressed if democracy is to exist.

Wolsink (2007) has offered a more complex explanation. He argues that it is not simply that public acceptance increases after construction but rather that public opinion is 'U-shaped'. This 'U' shape represents the range of public opinion which changes over time in relation to a person's experience with wind farms: 'These attitudes range from very positive (that is when people are not confronted by a wind power scheme in their neighbourhood), to much more critical (when a project is announced), to positive again (some reasonable time after construction)' (Wolsink, 2007, p. 1197). However, he does not suggest that the return to a positive opinion is inevitable and instead proposes that this will only occur where 'the existing environmental impact is adequately dealt with, in the eyes of the local population.' As such the importance of good management on the part of developers and positive community relations is highlighted since if problems occur, or damage is perceived to be done to the local community or environment, the return to a positive public opinion is unlikely to arise. Wolsink's argument presumes that the 'correct' attitude is for individuals to support (or at least not oppose) the wind farm. He does not therefore consider that opponents may have legitimate or noteworthy reasons for their opposition, or that they are not necessarily supportive of wind power by default. It is presumed that public support is the natural attitude and that this will always be restored so long as no problems occur.

The arguments presented in this section resonate with the literature relating to Public Understanding of Science (PUS). The PUS movement arose in response to a perceived threat to the legitimacy of science resulting from a breakdown of public trust (Gregory and Miller, 1998). Essentially it was felt that in order to increase public acceptance or deference for science one need only 'improve' the public's *understanding* of science. This represents a deficit model and the central premise, therefore, is that in instances where the public is hostile to new technologies this is a result of ignorance or lack of understanding, and as such this can be 'corrected' through better dissemination of knowledge (Jasanoff, 2005). Within PUS science 'is taken as unproblematic, universal and invariant, equally understandable in principle in all places and at all times. Failure to understand science then becomes a meaningful dimension of difference among individuals and communities' (Jasanoff, 2005, p. 249). People are designated along a spectrum running from 'knowledgeable' to 'ignorant' but their real experiences with science are not taken into account. It is impossible to know whether an individual in fact disagrees with a particular area of science and hence refutes its validity, as opposed to simply being uninformed. Moreover, the underlying assumption that greater knowledge or understanding of science results in greater acceptance remains unproven. As Irwin (2001) observes the public receives scientific information and (conflicting) 'facts' from a wide variety of sources and as such 'understanding' is not a simple process through which individuals receive the 'correct' knowledge. In many cases increased knowledge of science, or scientific processes might in fact lead to lower acceptance, especially when this means that one becomes aware of competing and conflicting scientific theories. Certainly in the case of wind power there is an unusually high level of awareness about the science among certain members of the public but this has resulted in both support and opposition for the technology (Barry et al., 2008). As Devine-Wright and Devine-Wright (2006, p. 244) have observed: 'There is now a proliferation of diverse civic organisations openly contesting or supporting the legitimacy of government policy for renewable energy generally and wind energy particularly'. Ellis et al. (2007, p. 520) contend there is no clear relationship between knowledge and acceptance of wind power: 'Indeed, many objectors appear extremely well informed about these issues'. Thus, a 'governmental awareness raising campaign to educate the Scottish [or other national] populace to

the benefits of a sustainable energy system based on wind power' (Strachan and Lal, 2004, p. 554) will not necessarily lead to greater acceptance of the technology. Wind power remains a contentious topic and opposition may well arise from *knowledge* of debates around the technology or national energy policies rather than from ignorance. Therefore, it is not possible to presume that opposition arises from ignorance or that all opponents are 'uninformed'.

5. The reason for understanding opposition is to overcome it

The literature exhibits a largely uncritical faith in international and national energy policies. It appears to see its purpose as identifying ways to reach the targets for emissions reductions and deployment of renewable energy capacity set by national governments and international institutions. The fundamental intention for considering public attitudes or reactions to renewable energy appears to be to understand community responses in order to mitigate negative perceptions and opposition in the future and therefore ensure greater rates of planning approval (see for example; Peel and Lloyd, 2007; Strachan et al., 2006; Toke, 2002; Wolsink, 2007).

However the conviction that opposition is an occurrence which must be overcome inevitably impacts on the ways in which the 'problem' is defined and considered and ultimately affects the conclusions that are reached, as Ellis et al. (2007, p. 536) have contended:

> The ideological (i.e. unreflectively pro-wind) and epistemological (i.e. unreflectively positivist) bias has led to poor explanatory findings, which in turn has resulted in ineffective policy.

Ellis et al. (2007) observe that the pro-wind power bias within the literature has led previous research to focus almost exclusively on objectors and therefore to ignore the ways in which support for wind power is constructed. Furthermore, they note that 'there is a tendency to marginalise and denigrate oppositional voices to schemes that are portrayed as being environmentally progressive' (Ellis et al., 2007, p. 536). The strong, underlying pro-wind power position within the literature can be conceived as being responsible for preventing meaningful understandings of public attitudes and responses towards wind power developments. Devine-Wright (2007, p. 10) has acknowledged that 'Despite a range of studies being carried out on public attitudes towards renewable energy technologies, genuine understanding of the dynamics of public acceptance remains elusive'. It does not seem unreasonable to suggest that a body of literature which is so clearly committed to enabling progress towards national targets for increased renewable energy capacity (particularly wind power) will be unable to fully represent the interests, concerns or experiences of opponents to this goal. The implicit assumption that opponents are 'wrong', or 'deviant' in their views and actions inevitably prevents commentators from understanding their full range of reasons and ethical, social, political or personal rationales. Without acknowledging that objectors might have legitimate and valid concerns one can never gain insights into the true nature of the events and people under examination.

This paper contends that it is necessary to understand opposition to wind power, however this necessity comes from a need to understand how the planning processes affect and are experienced by members of the public and to understand the social context of renewable energy, rather than to uncover ways of manipulating or avoiding potential future opposition.

6. Trust is key

The final theme to be discussed here is the frequently made conclusion that engendering trust and facilitating participation in planning and development processes will lead to greater rates of planning approval (see Breukers and Wolsink, 2007; Ellis et al., 2007; Gross, 2007; Krohn and Damborg, 1999; Wolsink, 2007). Krohn and Damborg (1999) contend that in many cases opposition to wind power developments arises as a result of detrimental or non-existent interactions with the developers or other central actors and lack of involvement of the local community in planning processes. As such local people may become vocal objectors precisely because of a lack of opportunities to engage with the proposal. Similarly, Breukers and Wolsink (2007, p. 2738) contend that 'Empirical research indicates that negative attitudes [...] may be reinforced by discontent with decision-making processes and the management of facilities'.

Likewise, Ebert (1999, p. 44) advocates effective stakeholder management to ensure 'healthy community debate'. Without meaningful communication and interaction developers are said to be unlikely to gain the trust of local communities and the result may be that 'The public feel alienated from decision-makers, believing that industry puts profits over welfare [...] the more the developer can win public trust, the more likely that the developer will get his/her development sited' (Upreti and Horst, 2004, p. 62). Barry et al. (2008, p. 75) found that within opposition texts there was 'a common theme of a lack of trust in government and regulatory agencies and wind energy developers and supporters. This varies from mild scepticism to outright mistrust of the public institutions involved in windfarm promotion or regulation and the motives and intentions of windfarm developers'. Similarly, in a case study of a planning application for a wind farm in rural Scotland, Aitken (2009) observed that several key objectors did not initially oppose the development but later became opponents based on negative experiences of planning processes.

As Barry et al. (2008) and Aitken (2009) have demonstrated, objectors often portray themselves as centrally concerned with issues of democracy, and as standing up not only for their local environments but also for their local communities. As such the topic of fairness appears to be key. However, how fairness should be understood is contentious; for example, is fairness best evaluated through outcomes or processes (Gross, 2007)?

Toke (2005a) places emphasis on outcomes and contends that local ownership of wind power projects is necessary to ensure local acceptance. He notes that 'In Denmark and Germany the wind industry readily acknowledges how widespread farmer ownership of wind power, cooperative shareholding, and the existence of local networks of voluntary activists and professional agents of the wind industry have generated a long term political sustainability for wind power programmes' (2005a, p. 53). Toke has frequently (for example; 2002, 2003, 2005a, 2005b, Toke et al., 2008), referred to the experiences of Denmark and Germany to highlight the need for greater community involvement in and ownership of UK wind power projects. Whilst he makes persuasive arguments to suggest that the higher rates of wind power development in Denmark and Germany are attributable to greater levels of community (primarily financial) involvement and ownership, he does not consider crucial social and cultural differences between these countries and the UK (such differences are well highlighted in Kuhnle, 2000). In particular, the notion of 'community' in such countries may be experienced very differently than in the UK. As such it is likely that public involvement in activities, such as the planning and development of wind power projects, will naturally occur in very different ways.

The former DTI's (2005) comparative study of European practice relating to community benefits associated with wind

power development found that in the UK there is no standard approach to the nature or scale of community benefits by wind power developers. It is noted that payment into a 'community fund' is becoming standard practice but even this lacks a standard approach or standard measures for managing the funds. Furthermore, it was noted that the provision of a 'community fund' (or other community benefits) risks creating the impression that developers are attempting to 'buy consent' and as such does not serve to gain public acceptance but rather to heighten hostilities. Therefore, whilst it was said that such community benefits are in some instances perceived to influence planning outcomes, it was also noted that developers' concerns about being perceived to be trying to 'buy consent' are effectively serving to 'cap' the levels of financial benefit that are offered.

The DTI (2005) study noted that in other European countries (especially Spain, Germany and Denmark) the issue of community benefits is not contentious in the way that it is in the UK. Community benefits were said to be 'built into the fabric of wind power development', and examples were given of job creation and tax benefits which are not similarly experienced in the UK. It was suggested that such community benefits have been a key factor in creating the higher levels of wind power development in these countries compared with the UK, however it was contended that such experiences are not directly importable.

Similar findings are reflected in a study of a former ship-building and coal mining community in northeast England (Jarrow) and its relationship with a local chemical industry plant (as reported in Irwin, 2001). It was found that whilst some individuals defended the company in question by referring to its charitable role towards local schools and community groups:

> Such voices [...] tended to be drowned by others who argued [...] that the company must have something to hide—otherwise why would it give money away?(Irwin, 2001, p. 104)

The study highlights the difficulties involved with establishing the appropriateness of community benefits—especially financial benefits. Although these may be given in order to appease the local community, in reality this may have quite the opposite effect.

Importantly the DTI (2005) study observes that there is no evidence to suggest that higher levels of community benefits offered by developers lead to higher levels of public acceptance or earlier planning approval for wind power developments in the UK. However, it is noted that poor or absent community liaison increases the likelihood of planning refusal at the local authority level and hence the need for developers to take the application to appeal. This suggests that local communities will respond better to *procedural* fairness, as opposed to *material* (or outcome) fairness. Since the issue is one of building trust any act which might be perceived as bribery could have detrimental effects, whereas those which are seen to allow meaningful participation of local community members might serve to create greater community engagement, and perhaps community acceptance.

Such observations have led to calls for greater public participation in planning processes for renewable energy developments (e.g. Breukers and Wolsink, 2007; Strachan and Lal, 2004; Upreti and Horst, 2004). The British Wind Energy Association (BWEA) advocate continued dialogue between developers and local communities throughout the assessment, planning, construction, operation and decommissioning of proposed wind power developments (BWEA, 1994). This appears to be largely to allay anxieties that the public may have relating to the proposed development. For example, it is said that developers should provide information on the anticipated size of the proposed development as; 'This helps to allay unwarranted concerns' (BWEA, 1994, p. 7). Two-way dialogue is described as necessary, however this two-way dialogue may have the purpose of one-way information whereby local communities are reassured by the developers and hence do not oppose the development. This may not therefore represent building 'trust' in the relationship between the local community and the developer if it is based on an intention to *remove* rather than *address* concerns.

Frequently, participation is promoted within the literature as a tool with which to ensure greater public acceptance (e.g. Strachan and Lal, 2004; Wolsink, 2007; Wolsink, 2000). Yet, scepticism might be expressed over the extent to which local objectors would be given opportunities to influence the design of wind power projects within participatory processes designed and led by individuals aiming to secure planning permission for their project. Traditionally, 'Participatory approaches [...] are justified in terms of sustainability, relevance and empowerment' (Cooke and Kothari, 2001, p. 5). Thus meaningful participation must empower participants and facilitate relevant and sustainable outcomes—with relevance and sustainability understood in both social and environmental terms. Where a developer facilitates a participatory process within a local community the outcome can only truly be said to represent the interests of the community if they were allowed to lead and control the process, otherwise the developer, being in a position of power, is able to shape the process and interpret the results as they see fit—or as fits their own interests (whether consciously or unconsciously). In such a case, participation serves to ease populist concerns and may give local people the feeling of involvement and empowerment but ultimately little has changed. Participation serves a cosmetic purpose of legitimising projects and decisions which have already been decided, participants then 'become a ghostly presence within the planning process—visible, heard even, but ultimately only there because their involvement lends credibility and legitimacy to decisions that have already been made' (Hildyard et al., 2001, p. 59).

However, one must also be cautious not to presume that objectors would necessarily *want* to participate in consultation exercises organised by developers. Indeed, in a briefing note addressed to 'anyone living in an area which may be subjected to an inappropriately sited wind-driven power station and needs help to oppose the development' written by Views of Scotland (2002) (an organisation campaigning against wind power) it is suggested that 'If you are consulted, you may wish to consider whether to participate or not'. The briefing note discourages objectors from taking part in early consultative processes since 'any minor changes conceded during scoping may make it more difficult for your views to be given weight later' (Views of Scotland, 2002). Objectors may not perceive consultative exercises to present meaningful opportunities to influence the design of proposed developments and may be sceptical of the extent to which their views would be taken on board. This reflects a perception that developers do not engage with objectors to listen to and address their concerns, but rather to find ways of overcoming or managing local opposition. This sentiment is clear within the Views of Scotland document where developers are described as making efforts 'to thwart your legitimate right to object to a proposal' (Views of Scotland, 2002)

Here it is clear how the key assumptions within the wind power literature (discussed in this paper) have fed into one another and ultimately shaped – and limited – how local communities are perceived and managed within wind power planning and development processes. The assumption that the majority of the public is supportive of wind power, informs the assumption that opposition is illegitimate and deviant. This then gives the impression that objectors are 'wrong' and leads one easily to the conclusion that they are ignorant or misinformed. The assumption that objectors should be overcome or avoided is

then an obvious one. As such an emphasis on participatory processes based on these assumptions will be severely limited in its scope or significance. Meaningful participation requires openness and the opportunity for participants to determine the processes and outcomes, it cannot therefore be undertaken with the assumption that certain participants (i.e. objectors) are wrong or less legitimate. Trust may, indeed, be a key concern within the planning and development of wind power. However, in order for this trust to be meaningful it cannot be conceived as a means to a particular end—i.e. less opposition and more wind farms.

7. Concluding comments

This paper has aimed to draw critical attention to key assumptions underpinning the extant literature relating to public attitudes and responses to wind power. It has shown how these assumptions effectively limit the scope of research in this area and restrict the findings that the literature can present. The vast majority of the literature appears to be wedded to the aim of identifying ways of facilitating progress towards national and international targets for renewable energy capacity. It takes an uncritical approach to these targets—as it takes an uncritical approach to available data on public opinion relating to renewable energy (and wind power in particular). As Ellis et al. (2007, p. 536) have noted the literature is 'unreflectively pro-wind' and 'unreflectively positivist' in orientation. This ultimately limits its ability to fully understand or represent public experiences with and attitudes towards wind power.

The literature is committed to identifying means of securing greater acceptance of wind power; however, this paper contends that it is this very commitment which prevents it from achieving this goal. So long as it presumes that opposition is misinformed, ignorant or deviant it can never fully understand individual or community experiences with wind power. Moreover, by presuming that opposition needs to be avoided or overcome it fails to acknowledge the potential value of objectors' points of view. Objectors are not necessarily ignorant, but rather may be very well informed about wind power or local issues relating to particular developments (Aitken, 2009). As such, their views should not be overlooked and participation should not be viewed as a means to overcome or mitigate opposition but instead as valuable opportunities to incorporate multiple viewpoints and knowledge resources. This would at times lead to the conclusion that particular proposed developments are inappropriate or socially unacceptable, however, it would open up dialogue between developers, planners and local communities and at times would present new opportunities to improve planned developments.

This paper has pointed to various criticisms of the existing literature. In particular, it has called for critical reflection on opinion poll data and greater consideration of where the assumption that the majority of the public supports wind power comes from. Secondly, it has asserted that it should not be assumed that opposition to wind farms is deviant or illegitimate and that the literature should not begin from this assumption. Thirdly, opposition cannot be dismissed as ignorant or misinformed and it must instead be acknowledged that objectors are often very knowledgeable and well informed. Indeed, local knowledge and viewpoints – including those of objectors – should be engaged with and taken on board in the planning and development of renewable energy. Fourthly, the paper proposes that public attitudes and responses to wind power should not be examined solely in order to mitigate potential future opposition, but rather there is merit in understanding public attitudes and responses in order to fully understand the social context of wind power, or renewable energy more broadly. Finally, this paper points to the irony of repeated calls for engendering greater trust within planning processes when the literature appears so clearly wedded to a managerial intention of overcoming opposition. Trust has been identified as a key issue, however it is not only necessary to engender trust in wind power developers or in the planning system, but additionally commentators in this area (as well as developers and planners) must also place greater trust in members of the public. They should trust the public to have valid opinions and legitimate knowledge and therefore should trust that open participation can produce positive outcomes whether or not these are in favour of particular developments. In sum, the literature must abandon the assumption that it knows who is 'right' and instead must engage with the possibility that objectors to wind power are not always 'wrong'.

The criticisms expressed within this paper should not be taken as being only relevant to the academic literature. The assumptions presented here have been shown to find their way into policy and practitioner debates as well as planning debates around particular proposed wind power developments (as highlighted above in relation to NIMBYism). Therefore it is important for the academic literature to critically reflect on its own assumptions and also on how these might be reproduced within related policies and practice. Furthermore, this relates not simply to public responses to wind power, but more broadly to the ways in which energy technologies fit into society. For example, in the UK controversy surrounds the proposed Severn Tidal Barrage and also the recent policy turn towards nuclear energy. As such it is likely that public perceptions and responses will continue to be of crucial importance. The literature on public attitudes/responses to wind power is well-established and may provide useful references for future debates relating to new or emerging energy technologies. However, it is important that this literature reflects on the assumptions underpinning it and the ways in which these have restricted its outputs and contributions. This is particularly important if it is to provide valuable insights and lessons for other technologies.

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