THE UNIVERSITY of EDINBURGH

Edinburgh Research Explorer

Understanding Public Responses to Offshore Wind Power

OPEN ACCESS

Paper for special issue of *Energy Policy*

Understanding public responses to offshore wind power

Dr Claire Haggett
Centre for the study of Environmental Change and Sustainability
School of Geosciences
Drummond Street
University of Edinburgh
Edinburgh EH8 9XP
UK
claire.haggett@ed.ac.uk
+44(0)131 651 4311

Abstract
This paper is about the role and importance of public responses to offshore wind power.
It builds on a framework for understanding social acceptance and opposition to onshore
turbines, and reviews the emerging research on offshore wind. While less is known about
how people will respond to offshore than onshore wind, there is now an emerging body
of research. From this literature, several common factors which influence responses have
emerged and are discussed here: the (continued) role of visual impact; place attachment
to the local area; lack of tangible benefits; relationships with developers and outsiders;
and the role of the planning and decision-making systems. The paper argues that, as with
onshore developments, the public should be included in decision-making about offshore
wind farms, and that they have a key role which should not be underestimated. The paper
concludes with some thoughts about the means to involve people and how effected
communities might be effectively acknowledged, identified and engaged.

Keywords: offshore wind, public acceptance, NIMBY

Title: Understanding public responses to offshore wind power

Abstract
This paper is about the role and importance of public responses to offshore wind power. It builds on a framework for understanding social acceptance and opposition to onshore turbines, and reviews the emerging research on offshore wind. While less is known about how people will respond to offshore than onshore wind, there is now an emerging body of research. From this literature, several common factors which influence responses have emerged and are discussed here: the (continued) role of visual impact; place attachment to the local area; lack of tangible benefits; relationships with developers and outsiders; and the role of the planning and decision-making systems. The paper argues that, as with onshore developments, the public should be included in decision-making about offshore wind farms, and that they have a key role which should not be underestimated. The paper concludes with some thoughts about the means to involve people and how effected communities might be effectively acknowledged, identified and engaged.

1. Introduction
The UK Government's ambitious targets for carbon dioxide reductions and energy generation from renewable sources – as discussed elsewhere in this special issue – have meant an increased emphasis on offshore wind. The implementation of renewable energy is a key part of the Government's ambitious long-term aim of reducing emissions of carbon dioxide by 60% by 2050, for which it has stated that "both onshore and offshore wind will need to make a significant contribution" (The Energy Challenge, 2006:100). This paper discusses the impact of this contribution on people and communities who live nearby or use offshore spaces.

This impact needs to be considered because of the apparent misconception that offshore sites are a problem-free alternative to siting onshore. Jay (2009) notes the regulatory attraction of offshore spaces for wind power, seemingly avoiding the problems of widespread public resistance, associated planning difficulties and lengthy delays encountered on-land. Ladenburg (2008:111) describes how the impacts of onshore turbines – visual, noise, harm to birdlife, local ecology and environment – have made it "increasingly difficult to find suitable and acceptable sites for future development. Energy planners have consequently shifted their focus to vast offshore wind resources". He further suggests that "offshore wind farms have become a feasible alternative to reduce or eliminate the disamenities" associated with on-land turbines. (Ladenburg, 2010:1297). Still (2001:548) argues that "by comparison with land-based wind farms, particularly in the UK and Europe, offshore areas have fewer restrictions and wind energy is less likely to be in conflict with other activities", thus mitigating the land use and planning difficulties experienced onshore (see also Henderson *et al.*, 2001; Marsh, 2001:18; Duffin *et al.*, 2002 who concur on this point; and Haggett, 2008a, for a further discussion of these misconceptions).

There seems to be a similar misapprehension that people's responses are not important when developing renewable energy offshore, and offshore sites are indeed often preferred because they remove the 'problem' of public protests. Soderholm *et al* (2007:384) suggest that "wind parks offshore are typically preferred over onshore parks" and have a "lower risk of public opposition for offshore instalments". They cite this as a key advantage of siting offshore, and one that compensates for the increased costs. Ladenburg (2010:1297) says that "people generally perceive offshore wind farms to hold fewer disamenities compared to on-land turbines". Further, Tong states that siting offshore means developing "without public opposition" (1998:400), and Farrier goes as far as to say that "offshore sites should suffer much less from the NIMBY attitude which can affect onshore sites" (1997:86).

But the first offshore wind farms – in the UK and elsewhere around the world – have not been free from opposition. While some benefits to developing offshore have been identified by local people (see Mels, 2003, on local investment; Ladenberg et al, 2006, on employment and security of energy supply; and Firestone and Kempton, 2007, on believed impacts for job creation, air quality, cheaper electricity), the situation is not just this straightforward. Indeed, in Firestone and Kempton's (2007) study of public responses to the Cape Cod offshore wind farm, fewer respondents believed there would be improvements than disadvantages. In the UK, wind farms off the coast of England (Brack and Haggett, forthcoming; Devine-Wright and colleagues, 2008), Wales (Haggett, 2008a; Devine-Wright and Howes, 2010), Scotland (Brack and Haggett, forthcoming) and Northern Ireland (Ellis et al, 2007) have not proceeded without opposition or conflicts. These protests have led to long delays, public inquiries, and the rejection of some proposals. It is not the case therefore that turbines are simply 'over the sea and far away'. Far from it – as Firestone and Kempton note from their study "the overwhelming majority of the public expects negative impacts from the project, and can name many expected negatives" (2007:1596).

The role of the public and key stakeholders groups and users is therefore just as important to consider in relation to offshore wind as onshore – or any other renewable energy development. This is not just because public opposition can prevent or delay developments. Ladenburg (2008:111) notes that "the energy planner's choice to develop on-land or offshore is, among other things, dependant on the public's acceptance", and he argues that policy-makers and wind energy professionals therefore need to take account of public responses towards offshore wind (Ladenburg, 2009). Firestone and Kempton (2007:1584) argue that "opposition and support for […] offshore wind is also of broader theoretical interest, as it addresses more general questions about how to incorporate public opinion into policy decisions"; and that this is important because "gaps in perception have led some in the wind industry to make incorrect inferences about the factors underlying the public's opinions" (Firestone and Kempton, 2007:1597). Better understanding what causes this very vocal and vociferous protest is important for a variety of practical and ethical reasons (Haggett, 2008b). And it can be better understood by learning and applying the lessons from the development of onshore wind.

2. Learning the lessons: the development of onshore wind

So what is known about the development of onshore wind? Since the first wind farms were built in the mid 1990's, their siting has been accompanied by protest – and this protest is strengthening and intensifying. Invariably when a wind farm is planned today, or there is even a suggestion of one, it is met with very fierce and vocal protest. A wide-ranging body of research has examined this opposition and support, and identified some key factors to help to understand it.

The most common explanation for any form of localised protest is that it is merely 'NIMBY'. This much-used acronym, 'Not-in-my-Backyard', characterises protesters as being in favour of a particular facility – be that a prison, housing estate, or wind farm – but just not wanting it near them, or having to suffer any of the necessarily disadvantages and loss of amenity that it might bring. In the renewable energy debate, this explanation is surprisingly widespread (Burrall, 2002; Kahn, 2000). But a wealth of academic research has found that the 'NIMBY' explanation for opposition is both too simplistic and inaccurate. First, it is problematic because the actual meaning of the term is rarely defined but has assumptions, usually negative, included within it – it is never a compliment to call someone a 'NIMBY'. These assumptions include an unproblematic agreement that various developments are required, but that for selfish, irrational, and parochial reasons people are wilfully and ignorantly preventing the siting of necessary developments in the local vicinity.

The second point is that a wealth of empirical evidence has convincingly argued that this sort of behaviour is actually very rare. Protest certainly does exist, but hardly ever on the basis of selfish reasons alone. Indeed, for a time, many studies were specifically oriented to discovering whether the protest was NIMBY or not – and resoundingly concluded not. There is clear agreement that NIMBY is not an effective way of describing or conceptualizing opposition. Since then, it is usually taken as read that protest cannot be simply categorised as 'NIMBY': in a journal article an opening paragraph will mention and dismiss the formerly pervasive theory, and then move on to discuss what seems to have motivated opposition in the particular case being studied (see for example Jobert et al, 2007). This is not about being friendly or critical about 'NIMBY' claims but pointing out that the label itself is opaque, inappropriate, and unhelpful; and that there is scare evidence for a 'gap' between any one person's attitudes and behaviour (see Wolsink, 1994; 2006, 2007a; Devine-Wright, 2005, 2009; Bell et al, 2005; Van der Horst, 2007; Haggett, 2008b, 2009, 2010a).

In contrast to the NIMBY theory, these studies and others from around the world have found that opponents tend not to be stupid, selfish or stubbornly ignoring the public good, but often oppose a wind farm on the basis of detailed knowledge of their area, the development, and the issue more generally. Following from this, research on onshore wind has identified five key reasons for support or opposition. Firstly, the ascribed aesthetic value of the particular landscape where a development is planned may form the basis of concern, rather than because it happens to be local (Toke et al., 2007; Wolsink, 2007a; 2007b; Wustenhagen, et al, 2007). Secondly, protests may also have roots in the

perceived value of any location, its social, political, and historical context (Haggett, 2008a), and the attachment that people have to that place (Devine-Wright, 2009).

Third, renewable energy conflicts epitomize the disjuncture between the local and the global. While issues of global warming may be far removed from everyday life, fears of local impacts are not (Agterbosch et al., 2008). Fourth is the role of the ownership of a development, and relationships that people have with developers (Wolsink, 1996). Finally, the decision making processes, trust in decision-makers, and opportunities to meaningfully are critical in forming support and opposition to a development (Gross, 2007; Haggett, 2010b).

3. Understanding the lessons: the application to offshore wind
The research evidence from the implementation of onshore wind is well established. Accompanying the initial development of offshore wind, there is now a small but growing body of work on public responses to offshore sites. The initial evidence from this research demonstrates is that these same factors are just as applicable offshore as onshore.

3.1 Visual impact
It is often assumed that one of the principle objections to onshore turbines – their visual impact – can be easily solved by moving them offshore. For example, Duffin *et al.*, (2002), Rasmussen *et al.,* (2000), Henderson *et al.* (2001), Farrier, (1997), and Tong (1998) all argue that siting offshore alleviates this issue, and Bone (2004) says that siting offshore can "represent an insignificant visual intrusion". But turbines, even several miles offshore, still have a visual impact – and for many people, this is a decidedly negative impact. Soerensen *et al.* (2001a:17), in their study of wind farms off the coast of the Netherlands, comment that concerns about the visual impact played a major role at the public hearings for the wind farms, and that it was "the most important factor in public opinion surveys", a finding echoed by Kempton *et al.* (2005). Ladenburg and Dubgaard (2007) point out that while some impacts such as noise might be mitigated by moving offshore, visual disamenities prevail. Snyder and Kaiser (2009:1852) suggest that "citizens place a premium on viewsheds unobstructed by wind turbines", a point echoed by respondents to Ladenburg et al's (2006) study, who described the loss of an undisturbed view of the coastline. As Devine-Wright and Howes (2009:12) point out "offshore wind farms may be just as controversial as onshore projects, since the places affected by change do not cease at the water's edge and include the view of the horizon". These issues are important because so many people live near the coast; indeed, Glaeser (2004:201) points out that coasts provide homes for 50% of the world's population, and that according to estimates from the UN, this will soon be as many as 60%.

This visual impact is of often of concern because of the perceived 'lack of fit' with the current surroundings. In Denmark, Ladenburg and Dubgaard (2007) note that visual impact is a concern if people believe that their view of the sea should not be spoiled; for example, if it is replaced by an 'industrial' landscape. This is a key finding from Devine-Wright and Howes' (2009) study of the offshore wind farm off the coast of North Wales; and respondents to Brack and Haggett's (forthcoming) study of the Robin Rigg wind

farm off the coast of Cumbria said that: *"People should not have to endure living in an enforced industrial area"*. Tunstall and Penning-Roswell (1998:1) describe how "English beaches and coasts have a special place in the nation's consciousness […] the English beach, with its particular characteristics and contexts, hold special meanings for those it attracts and creates experiences which have lifelong echoes". Changes to coasts and coastal views – with something that jars with those special meanings – are therefore unlikely to be well received.

Two further points about visual impact – in terms of distance, and familiarity – are worth making here. Firstly, indings from various studies differ on the effect of moving turbines further offshore. Arnold (**in Jepp**) suggests that because people have less knowledge and interaction with offshore spaces further from the shore, they generally are less concerned about these areas, as does Ladenburg (2008). But this has to be a very long way out to sea – often not possible because of the financial or technical problems involved – and even siting several miles out to sea does not automatically solve the issue of visual impact. As Henderson says, turbines have an inescapable visual impact in an "otherwise structureless landscape" (2002:17); just as famously the white cliffs of Dover can be seen from Calais, a distance of 30km.

Secondly, the role of experience and familiarity in reducing any visual impact is also important. Still (2001:548) for example says of the development at Blyth in North East England that "visually the turbines have been well received. They have rapidly become part of the background, only being really noticeable on a sunny day from the beach". This idea of familiarity is well documented within the literature about onshore wind farms (see for example Pasqualetti 2001:695; Krohn and Damborg 1999:958; and Edwards 1994:641; Warren et al, 2005). Wolsink (1994) has posited that acceptance of onshore turbines can be thought of a 'U' shaped curve: initial high support falls when more details of a project are revealed and negative impacts are discovered, but then recovers as people become accustomed to the turbines and impacts are found to be less detrimental than feared. This analysis is worth reconsidering in light of the impacts of offshore wind farms too.

For example, it is clear that experience of existing turbines influences responses to new plans. Ladenburg (2010:1298) points out that studies of attitudes to offshore wind farms are often based on samples of respondents who are unlikely to have any experience of them. He suggests however that "experience-based attitudes appear to have a central role", following from the recognition that experience with onshore turbines seems to have an influence on the attitudes towards offshore wind farms: "Respondents who can see on-land turbines from their permanent or/and summer residence appear to be more positively inclined towards offshore wind farms. These results suggest that respondents who are confronted with the impacts of on-land turbines on a daily basis might perceive offshore wind farms to be substitutes for on-land turbines" (Ladenburg, 2010:1302).

This suggests that people who dislike onshore turbines may prefer them offshore. But offshore sites are not necessarily viewed as a satisfactory alternative; this may merely move but not avoid the problem. This is certainly the finding from Brack and Haggett's

(forthcoming) study.   They found that rather than breeding content, as per Wolsink's curve, familiarity with onshore turbines led to greater contempt for both more onshore and offshore turbines. Local people had direct experience of the visual impact of onshore turbines, felt that the local area was over-burdened with them, and frequent inoperation led to concerns about the viability and feasibility of wind. For people who already live near wind farms, their experience led to a belief that there was little to be gained by taking turbines offshore; and the number of wind farms onshore already mitigated against more, wherever they were sited. These are people who *already* have wind farms in their 'backyard' – and this was directly generating opposition, rather than acceptance and support. The research suggests that local people do not separate so easily spaces that are on or offshore, and that local environments are of conceived very broadly (whether they are land or seascapes). Negative experience onshore leading to negative responses offshore is echoed by Firestone et al (2009), who describe how improperly sited land-based wind farms which have caused excessive avian deaths motivated opposition offshore.

Visual impact is important to address because it is still a dominant influence on opinions, even when siting offshore. If people have had negative experience of visual impact onshore, this may be transferred offshore. The preliminary research with people who have experience of offshore wind farms suggests that visual impact influences responses to any further development: "the presence of offshore wind farms seems to affect preference formation concerning the tolerance towards the externalities in a negative way" (Ladenburg and Dubgaard, 2007:4068). It is not the case that offshore wind farms are out of sight and out of mind, but they may be within sight of a great many people, who respond negatively to that sight.

3.2 Local context and place attachment
Research on onshore turbines emphasises the need to focus on the particular location in which turbines are being sited – and the attachment and meaning that that place has for people. The local social and historical context is crucial; each location is different, and people will feel differently about it and any plans for change. Devine-Wright and Howes (2010) use the lens of 'place attachment' to both understand the opposition to the offshore wind farm in a costal town in North Wales, and the less negative responses from a neighbouring town towards the same development. Llandudno is a famed Victorian seaside town, with a booming tourist industry, sites of international geological and archaeological significance, and renowned beauty spots. The town of Colwyn Bay was described in much less positive terms by local residents as "run down", "dying" and "forgotten". Views and values of place provided then formed responses to the wind farm. Llandudno residents described the offshore wind farm as a significant threat to the town, unfitting in an area of outstanding natural beauty, and being "monstrously damaging". In contrast, for Colwyn Bay residents, the potential 'industrialisation' caused by the turbines was less negatively received: "in the context of a place interpreted as being in decline, industry was perceived as possibly a 'good thing', boosting employment and prosperity locally" (Devine-Wright and Howes, 2009:8). Similarly, Firestone et al (2009) describe the differences in local context between Delaware and Cape Cod in their study; and how

these to a significant extent determined the differences in opinion about a locally sited offshore wind farm.

How people feel about a place, and their attachment to it and experience of it, will therefore influence their views about any potential changes, such as an offshore wind farm. In a nicely nuanced analysis, Ladenburg (2010:1302) found that that respondents "using the coastal area intensively and independent of the season perceive offshore wind farms differently", ie, "more negatively" than less regular beach users. Devine-Wright and Howes (2009) describe how places which are regarded as psychologically restorative – by both local people and visitors – will be much more strongly defended against developments such as offshore wind farms. Ellis et al (2007:528) note concerns about impacts on the natural quality of the Northern Irish coast "recognising the therapeutic value of the seascape" and the "unique character of the coastline", and Hammarlund (2003) found that tourists were less positive about offshore turbines than local residents, because they wanted to enjoy the unspoilt nature of the places they were visiting.

It is perhaps unsurprising that opposition to offshore wind may exist in places that are perceived to be beautiful and valuable. Jay (2010:495) describes how in "cases where schemes were opposed, local conditions worked against the proposals […] the coastlines that would be affected were undeveloped and scenic, and the unspoilt nature of the coastlines were the basis for tourism and recreational activities"; whereas less opposition was found where "affected coastlines were sympathetic to the siting of wind arrays because of the general absence of high landscape value and the relatively developed nature of the areas". But again, the situation is not necessarily this simple. Protests about the offshore wind farm off the coast of Teesside have caused surprise, when the area is seen as 'already' scarred by the petro-chemical industries. An opposition group has been formed called 'IMPACT: for people living near hazardous industry', which is protesting against the offshore wind farm off the coast of Redcar. However, the difference between the wind farm and the petro-chemical factories is that these industries form the economic heartland of the area, and (unlike the wind farm) provide jobs and income for local people (see Phillimore and Moffatt, 2004). Additionally, in an area that has suffered the consequences of industry, the remaining areas which are 'unspoilt' become even more precious, not less. The social context of the area means that factories might be acceptable to some, while the wind farm is not (Haggett, 2009). Local environments are valuable locally, particularly in terms of frequency and ease of access, leading to conflicts over the value of spaces when siting offshore wind farms.

3.3 The disjuncture between the local and the global
A key finding from the research on responses to onshore wind is perceived disparity between any global benefits of wind power and the effect on the local vicinity. The same principle applies offshore. As Glaeser (2004:204) says, for offshore wind farms "while macroeconomic issues, energy, and climate politics are the focus of discussion at the national level, the local level discussions centre on the risks and benefits for the coastal area". This is a pattern repeated wherever offshore wind farms are planned. Jay (2010:495) notes that during the first round of applications for offshore wind farms around the UK "factors mitigated against the projects, such as a lack of direct economic

benefit for the area". In Germany, while the national government produced position papers about the importance of offshore wind energy in reducing greenhouse gases on a national and European level, "the resident population is unsure whether it will actually be able to benefit from the expected positive developments" (Kannen, 2004:177). In the USA, Kempton *et al.* (2005) describe the disparity between the global benefits of wind power being expounded by proponents of the scheme, and the immediate effect on the local area stressed by opponents. In North Wales, local people believed that they were suffering disadvantages for a distant English gain (Haggett, 2008). In Northern Ireland, Ellis et al (2007:528) note the relevance of "tangible local impacts", and local consequences of any scheme.

These local consequences which impact on people's views include fear about harm to the local environment (Firestone et al, 2009; Firestone and Kempton, 2007; Ladenberg et al, 2006); impact on birds and sealife (Jay, 2010; Firestone et al, 2009; Ladenberg, 2009; 2008; Haggett, 2008a; Firestone and Kempton, 2007; Hartnell and Milborrow, 2001, Brack and Haggett, forthcoming); the local fishing industry (Gray et al, 2005; Firestone et al, 2009; Firestone and Kempton, 2007); recreational activities such as boating, fishing and yachting (Firestone and Kempton, 2007); and the loss of tourist income (Devine-Wright and Howes, 2009; Haggett, 2008a). Firestone and Kempton found potential environmental damage caused by turbines had the most effect on opinions about the proposal. Interestingly, they note that this concern was related to the perceived effectiveness and efficacy of such a proposal: "if people believe that offshore wind offers little benefit, why accept the environmental costs?" (2007:1588).

This point about benefit is interesting. Damage is tangible and immediate – but any benefits are usually invisible, spatially or temporally distant, or will be enjoyed by others. For example, respondents to Firestone and Kempton's (2007) study were asked whether any changes to the proposed project would alter their opinions. While many people remained in opposition, potential changes that had most impact were the local area receiving the electricity generated, if that electricity was cheaper, if the local fishing industry was helped, or air quality was improved – i.e., direct, tangible, immediate and local benefits. In terms of any broader benefits, Ellis et al (2007) found a significant proportion of protesters demonstrating awareness and a willingness to climate change, but a strong scepticism about whether wind power could meet this challenge, and Firestone et al (2009:195) found that "climate change does not appear to have been a primary driver of public support for offshore wind". Indeed, in Firestone and Kempton's (2007:1596) research, only a quarter of respondents thought that the wide scale development of offshore wind would help tackle global climate change, with 41% believing that it would have no impact at all. The disjuncture between impacts and benefits, and where and when these are experienced, is therefore significant to take into account.

3.4 Relationships with outsiders
One of the key findings from research on onshore wind farms is that small, locally based community groups developing wind farms are met with less opposition than huge, distant, faceless corporations (Gross, 2007; Jobert *et al.*, 2007; van der Horst, 2007;

9

Wong, 2009, Haggett, 2008b). However, as Snyder and Kaiser (2009) note, European offshore wind farms are being developed by the largest energy companies in Europe. Of course, the costs and planning required to plan and build offshore will tend to lead to this; but it has consequences for local acceptance. In examining support and opposition in Northern Ireland, Ellis et al (2007) found a significant proportion of protesters with a general mistrust of the concept of wind power, which stemmed from a mistrust of the motivations of the developers. Devine-Wright and colleagues (2008) have shown that even when a project is well supported, there is often a lack trust in the developer. When asked if the same project being developed by the local government, rather than a private developer, would effect their attitudes, a fifth of the respondents in Firestone and Kempton's (2007) study said that they would be more likely to support the project. In a study of public responses in Wales, relationships with the developer were key (Haggett, 2008a). The developers were a UK wide company, most of the representatives at the consultation sessions were from London or Reading, and were perceived by local people to have little knowledge or experience of the local situation. Producing brochures about the development in Welsh as well as English was felt to be a public relations gimmick rather than an indication of a local character to the proposal, or any understanding of the local area.

The nature of control and ownership of a development in forming opinions about renewable energy has been explored in relation to offshore wind power developers, fishers, and regulators (Gray *et al.,* 2005). Each of these groups had quite different perceptions of who owned the seascape and had a right to make decisions about it, and about that decision-making process. For example, developers felt that rights to the sea extended beyond fishing designations, that they had made all reasonable efforts to consult with the fragmented fishing industry, and that some fishers were using the proposals as an opportunity to put in extended or bogus claims for compensation. However, fishers felt that their livelihoods were threatened by exclusion zones around offshore wind farms, areas in which they had fished for generations and had a right to be in. Fishers tend not to react well to entreaties from outsiders, and felt that the consultation with them was merely cosmetic, that their views were not taken seriously or acted upon, and that developers manipulated the consultation process. Agreements were only reached if they did not disadvantage the developer. As a result, many fishers felt they had no control over the development or decision that were directly affecting them, and their perceptions of the attitude and actions of the developer transformed their initial views about the wind farm into outright opposition. Wolsink (1996) has said in a discussion of onshore wind that often people are not against turbines per se, but are primarily against the people who want to build them, and it seems that this sentiment is just as pertinent offshore as well.

3.5 Planning and participation
Following from the relationships and trust that people have in developers, the processes and forums through which any interactions take place are significant in forming support or opposition for any project. Gross (2007) demonstrates that if people feel that the processes for considering an onshore wind farm are fair, they are more likely to support the outcome of those processes. However, the research on offshore wind farms suggests

a lack of faith in decision making and decision makers, and a lack of meaningful engagement and involvement – and that this contributes to a lack of support for a project. Indeed Kempton *et al.* (2005:126) note that perceived "unfairness and inadequacy of the permitting process" was a factor motivating protest, and Firestone and Kempton (2007:1585) describe how important the "perceived inadequacy of the permitting process" is in forming opposition, even more so than the visual-aesthetic impact.

This opposition can be both because people perceive that they have no voice, or no power. Haggett (2008a) has documented the inadequacy of consultation processes and what were perceived to be fait accompli decisions, where residents and key local stakeholders in Wales felt that their views were ignored, points raised were not responded to, and 'consultation' sessions were in effect about one-way information distribution rather than a dialogue. A lack of power is also important. Devine-Wright and Howes (2010) describe how respondents' worries about the impacts of a proposed offshore wind farm were compounded by fears that they would have no comeback if problems such as noise did manifest. Even when there is support for an offshore project, such concerns do not seem to be alleviated. The initial conclusions from research on the offshore wind farm in the Greater Wash region off eastern England demonstrate relatively strong support (61% of residents in the nearby town of Skegness agreed with the statement 'I support the Lincs wind farm'). But, few people placed any trust in the developer, large numbers of people were unsure about how decisions were made, and further described feeling unable to influence planning decisions (Devine-Wright and colleagues, 2008).

Both the extent and purpose of public engagement about offshore wind farm is therefore important. Concerns about a lack of meaningful involvement can lead to opposition; but conversely, "increased public control over wind power deployment can help to mitigate that protest" (Kempton *et al.*, 2005:126). The planning process for offshore projects should therefore ideally allow local people to have some say or even influence in the project (Petersen and Neumann 2003; Henderson 2002:17). While public involvement is very challenging it is highly recommended; as Sorensen *et al.* comment "if a sense of control is created through an open and dynamic process, the confidence of the public may be achieved" (2001:328).

4. Discussion
This paper has reviewed some initial and emerging research on public responses to offshore wind. This research makes apparent a number of key factors which influence support and opposition, and that these factors can be understood and accounted for. Responses are motivated by visual impact and seascape value, issues pertinent to the local context and attachment to that context, issues of immediate concern, trust and relationships with 'outsiders', and the opportunities for discussion and involvement available. (Successful) development therefore needs to take account of these factors, to allow people to express their views in a meaningful way – and to listen to them.

What is apparent from this research is that offshore sites are not simply and automatically preferred to onshore, and that moving offshore does not necessarily solve the 'problems' of siting onshore. It is not always the case that, even if they have a positive experience of

11

onshore turbines, people will support them in the offshore environment, or that negative responses onshore will be mitigated by a move offshore. It is also not the case that degraded environments and places are suitable locations, and that value and attachment have complex but important roots.

What is therefore also apparent from this research is that, just as with onshore wind, 'NIMBY' is a simply inadequate way to conceptualise and understand opposition. Not only do the complexity and interaction of some of the factors discussed illustrate this, but research on offshore wind has specifically moved beyond this categorisation. People are not irrationally jumping to conclusions about offshore wind: Jay (2010:495) notes the "intimate knowledge" drawn on when considering responses to local development. It is not the case that people only think about their 'backyard': Ladenburg (2009) describes the larger visual impacts that were of concern. People do not selfishly protest only if they are likely to be affected: Ladenburg and Dubgaard's (2007:4068) results "strongly indicate that even if a large proportion of residents (and people in general) are unable to see the offshore wind farms on a daily basis, the visual disamenities are still perceived as being important", and Ladenburg (2008) found that respondents living closest to onshore or offshore turbines were not more negative than those living much further away. Firestone et al (2009) are clear that while many of their respondents focused on perceived negative aesthetic impact, and that this "concern is, for some, a code for NIMBY, notions of attachment place likely have more resonance" (2009:195), a finding strongly echoed by Devine-Wright (2009), and Devine-Wright and Howes (2010).

Responses to offshore wind, and the misconceptions and categorisations associated with them, are important to understand. As Firestone and Kempton argue, "private development decisions are made in part on the basis of public opinion", and that therefore "we feel that such decisions should be based on sound data and analysis" (2007:1596). There are also the associated consequences to consider of inappropriate projects and processes. West et al's (in press) study of public responses to the Wave Hub in Cornwall demonstrates that "public opinion on a range of issues linked to marine renewables remains in a state of flux; consequently, failure to consider factors that may sway public opinion runs the risk of creating problems later during the enactment of the UK's renewables strategy". While more research is indeed needed (Ladenburg, 2010), some important lessons can already to drawn.

Firstly, the public are not homogenous group. The views of respondents to Firestone and Kempton's (2007) study, and Ladenburg's (2010) study held views that varied according to age, gender, income, education, and length of residence. But more than this, different values, different roles, and different experiences will all be brought to the fore when considering offshore wind projects. Ellis et al (2007) provide a useful discussion of the varying motivations and discourses for support and opposition. Devine-Wright (2009) also highlights the various meanings that projects will have, in the context in which they are proposed. The detail of Ladenburg's analysis very nicely highlights the small differences that can have a big impact on attitudes – not only does he isolate people who used the beach as a key group, but differentiates further between people who visited with varying degrees of regularity, and at different times of the year – and demonstrates the

consequent difference in their responses to the wind farm. Gray et al (2005) focus on the particular views of fishers in the development of offshore wind, but there are other distinct and divergent groups who are relevant here (again, none of which will necessarily be internally consistent) including shipping, fishing, boating, nature conservation, to name but a few.

This leads into the second point, about the need and the difficulty of engaging with diverse people and groups. West et al (in press) rightly argue that "public consultation is now recognized as an essential component of building public support for renewable energy", but while this is difficult and complex in relation to onshore wind, it is certainly even more so with offshore. Defining a 'local' or 'affected' population becomes more difficult as offshore sites can both far out at sea, and yet visible from very wide areas. The role that different groups might have also needs to be considered. Should everyone have an equal input into discussions about the need and siting of offshore wind, or should those who are likely to be affected given more proportionate representation and power? Sorensen et al. (2001:329) document the wide ranging, open, and inclusive consultation processes for the Middlegrunden offshore wind farm off the coast of Copenhagen, which led to compromises over layout and design, and widespread public support. Almost as an afterthought, they mention the "relatively small group of yachtsman, fishermen, individuals and politicians [who] remained in opposition". It could be argued that these groups, while "relatively small", perhaps have views which are relatively more important if they use the sea more and will be more affected by the development than those who were in support of it. This is part of a wider debate about the processes for the development of wind power, (see Bell *et al.*, 2005, for a discussion of democracy in the decision-making processes concerning wind power, and Gross, 2007, for a reflection on inequitable outcomes between different sections of a community). Jay (2010:495) envisages a key role for spatial planning here, and that it could "provide an overarching framework for the management and regulation of marine activities". This may be so, but it will certainly be faced with challenges over the extent, efficacy, and equality of public and stakeholder involvement in offshore wind farm planning.

The third point, and perhaps a way to move forward, is to turn more attention to support for offshore wind. This is not to implicitly and pejoratively assume that wind power (on- or offshore) is necessarily a good thing, as authors often tend to do (Feldman and Turner, 2010). It is further not intended that this paper be part of the body of research, rightly critiqued by Ellis at al (2007), which problematises opposition by only focusing on the reasons for objection (and thus implying that the appropriate position, which needs no explanation, is support). What such a focus assumes is that offshore wind will be going ahead, that the EU and UK government policy and financial support will continue, and that developers will plan for more offshore sites. It follows Ellis et al.'s argument that "developers of offshore proposals should recognise the *potential for objection* and adopt processes that are sensitive to such as context" (2007:536, emphasis added). Recognising the potential for conflict means understanding the reasons for that conflict, engaging with people, and where possible providing meaningful benefits. These could include short term benefits, such as using local services for contractors, and longer term benefits, such a developing local infrastructure, invigorating ports and harbours, and setting up training

schemes so that local people could be employed in the industry. It could include tangible benefits through monetary investment in local communities, and more intangible, such as investing time in local communities, generating discussions around energy, and creating local pride and prestige for communities as trailblazing energy hosts. This is not to undermine the importance of factors such as visual impact, which are hard to mitigate and even harder to dissuade people of their significance. It is about acknowledging local impact and understanding the local context to find ways forward to develop offshore wind with people, rather than against or in spite of them.