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Citation for published version:

Haggett, C 2008, 'Over the Sea and Far Away? A Consideration of the Planning, Politics and Public Perception of Offshore Wind Farms' *Journal of Environmental Policy and Planning*, vol 10, no. 3, pp. 289-306. DOI: 10.1080/15239080802242787

Digital Object Identifier (DOI):

[10.1080/15239080802242787](https://doi.org/10.1080/15239080802242787)

Link:

[Link to publication record in Edinburgh Research Explorer](#)

Document Version:

Peer reviewed version

Published In:

Journal of Environmental Policy and Planning

Publisher Rights Statement:

© Haggett, C. (2008). Over the Sea and Far Away? A Consideration of the Planning, Politics and Public Perception of Offshore Wind Farms. *Journal of Environmental Policy and Planning*, 10(3), 289-306doi: 10.1080/15239080802242787

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Paper for consideration for submission in *Journal of Environmental Policy and Planning*

Title: Over the sea and far away? A consideration of the planning, politics and public perception of offshore wind farms

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Over the sea and far away? A consideration of the planning, politics and public perception of offshore wind farms

Abstract

This paper is about the politics, planning, and public perceptions associated with offshore wind farms. While only half the applications for onshore wind farms are successful in England and Wales, the latest round of offshore applications have had far higher rates of consent. But is it simply the case that siting wind farms offshore solves the problems that onshore applications encounter? This paper argues that many of the same problems are experienced by both onshore and offshore wind farms, albeit in slightly different ways; and that these need to be addressed if the promised expansion in offshore wind is to be delivered.

This paper draws together the research and evidence relating to onshore and offshore wind developments, exploring this with the emerging research on public perceptions of offshore wind farms, and initial empirical evidence from a proposed wind farm off the coast of North Wales. It concludes with some remarks about the potential for offshore wind around the UK, considers the role of spatial planning, and discusses issues for policy and planning that must be addressed if the Government's ambitious targets are to be achieved.

Key words: wind farms; offshore; renewable energy; spatial planning.

Introduction

“Site them out at sea where no one can see them”¹. So said Clive Aslet, editor of *Country Life* magazine in a discussion about the impact of offshore wind farms. Respondents to a survey by the Rural Gateway organisation in Scotland expressed similar sentiments: “My views on the wind farm turbines are very simple, keep them offshore and away from our beautiful countryside”² said one. Moreover, Upham and Shackley (2006:54) found that the local people they interviewed preferred renewable energy developments to be sited “away from themselves, other habitation and valued onshore landscapes, i.e... offshore”. That turbines belong offshore, away from people and precious vistas is not just a popular perception. As will be detailed in this paper, despite the increased costs, massive scale of the work, relative lack of experience, and the specialised technology and engineering required, a wide range of technical and academic research also seems to subscribe to this view.

But is the answer this straightforward? Does siting turbines offshore somehow ‘solve’ the problems encountered onshore? This paper will argue that many of the issues that are relevant to siting turbines onshore are just as relevant offshore, and that they merely manifest in slightly different ways. Moreover, a realisation of this is crucial if the political will to implement offshore wind farms is to be realised. This paper therefore provides a critical review of research on offshore wind and a discussion of these issues that both on- and offshore wind energy encounter, before concluding with some remarks about the meaning of consultation and the role of spatial planning.

Offshore wind farms in the UK: the current situation

There are currently five offshore wind farms operating off the UK, with others approved or under construction. The first was commissioned in December 2000 and consists of two turbines, installed one kilometre off the coast of Blyth in Northumberland. At the time of installation these turbines were the largest in the world, and the first to be subject to the ravages of the North Sea. The UK's second offshore wind farm at North Hoyle, off the North Wales coast, became operational in November 2003; the third, at Scroby Sands in The Wash, started generating in June 2004; the fourth, at Kentish Flats off the Kent coast, in September 2005; and the latest, off Barrow in Cumbria, in July 2006.

The UK Government's impetus to build more offshore wind power is clear. On the 14th of July 2003 the then Secretary of State for the Department of Trade and Industry (DTI), Patricia Hewitt, announced that developers would be invited by the Crown Estate³, which grants leases for the installation of wind farms, to bid for sites in three strategic identified by the DTI: the Thames Estuary, the North West coast, and Greater Wash area. In her statement, Mrs Hewitt emphasised the Government's support for offshore wind, and the beneficial impact it could have:

“This announcement represents a big step towards meeting our goals. Offshore wind has potential to provide a significant proportion of the UK's energy needs. It will help the UK renewables industry to grow, building on our world leading expertise in offshore manufacturing, creating over 20,000 new jobs in manufacturing, installation and maintenance, as the wind farms take shape.”⁴

For myriad reasons therefore, including the potential market position of the UK in renewable technologies, dependence on imported fossil fuels, and climate change, the government is very keen to promote the proportion of energy generated from

renewable sources. In the 2003 Energy White Paper, it set out goals of 10% of energy to be produced from renewable sources by 2010, with a further aspiration of 20% by 2020. Indeed, 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 Review, 2006:100).

There is no suggestion then that the government wants to abandon onshore wind in favour of offshore – but it does recognise the problems encountered by onshore wind. The Energy Review (2006) documents the delays, planning problems, and social acceptance issues that onshore wind applications experience, and states that measures are needed that will ensure a smoother progression for applications through the planning system. This paper will discuss these problems (and others) that have beset onshore wind, and, crucially, how they apply to offshore wind as well. Furthermore, while the government is not abandoning onshore wind, what this paper will point out is that a wide range of research is indeed suggesting the offshore should be promoted over onshore, and at the very least, that developments offshore provide the answers to the implementation problems that have been experienced.

It is also worth noting the distinction between 'offshore' and 'near-shore' when considering these issues. Most offshore wind farms built or planned in the UK would be classified as 'near-shore' rather than offshore. The latter implies a greater distance out to sea, and there are a range of difficulties to overcome before this becomes practicable. For example, Firestone and Kempton (2007:1584) note that building further out to sea entails additional costs, technological difficulties, and "greater

hazard exposure to workers during the life of the facility”, points also made by Verbruggen *et al.*, (2002). While the technology is in development for turbines to be sited up to fifty nautical miles from the shore, this would come at much higher costs (Kempton *et al.*, 2005).

However, it is important to note that definitions or classifications of ‘near-shore’ and ‘offshore’ are not often given. Even when a distinction is made, such as the DTI’s policy document ‘*Future Offshore*’ (2002) noting that ‘near-shore’ sites will have greater visual impact than those ‘offshore’, the generic latter term is then used throughout the rest of the document. Empirical research on ‘offshore’ wind farms – such as by Kempton *et al* (2004), and Firestone and Kempton (2007) – also uses the term offshore when perhaps what is being referred to is near-shore. For the purposes of this paper, the term ‘offshore’ will be used, firstly because this is the term used in the papers and documents being drawn on. Secondly, this term is appropriate because many of the same issues will apply whether a wind farm is one kilometre or twenty kilometres offshore – environmental impacts, conflicts with other sea users, and visibility even several miles offshore. Offshore in this sense means just that – off the shore and located in the sea.

Comparing onshore and offshore: a critical review⁵

What this paper will discuss are the implementation issues (and problems) that the political impetus for offshore wind energy documented creates. By drawing together the research on onshore and offshore wind farms, this paper highlights the difficulties that are apparent with both.

For example, the latest research shows that less than half of onshore wind farm applications in England and Wales are successful through the normal planning process, with a further small percentage being permitted on appeal (Toke, 2005). The problems that have led to this high rejection rate include the visual impact of turbines in the landscape, a lack of suitable sites for them, their environmental impact, and public opposition. Changes in government policy, such as the new presumption in planning in favour of developing renewable energy because of the “wider economic and environmental benefits” it brings, as stated in the government’s guidance for the consideration of renewable energy applications, Policy Planning Statement 22 (2004:9), have not solved these issues.

What is interesting is that it becomes apparent from the research on offshore wind that it is seen as a good thing not just in its own right, but because it may be the answer to many of the problems encountered with onshore developments. For example, Bone (2004:9) describes how objections and problems siting onshore turbines have “pushed wind farm developers to seek the apparent peace” of an offshore environment. This paper will therefore detail some of these ‘problems’ that onshore wind farms have encountered, and then consider how they might apply to offshore developments.

Visual impact

One of the most common complaints about onshore turbines is their visual impact. Protesters describe scarred landscapes and the desecration of beautiful and prized vistas. Research on wind farms continually re-emphasises that the visual influence is the most important factor in siting a wind farm (see for example, Toke *et al.*, 2007; Wolsink, 2007b, 1994; Brittan, 2002;; Thayer and Hansen, 1988). However, the

contingencies of the government's strategy for the first round of applications for onshore wind farms meant that to make any financial return, developers had to site turbines in the areas of the highest wind resources (Birnie *et al.*, 1999). This often led to windswept rural landscapes, valued for precisely their beauty and remoteness, being designated for developments. The controversial scheme at Whinash, on the edge of the Lake District in the North West of the UK was turned down firstly by an Inspector and then at an appeal on the basis of the impact it would have on the local landscape⁶.

So, does siting offshore remove this – at times insurmountable – problem of visual impact? It is certainly the case that the distances from the turbines to the shore and the weather conditions in the UK may moderate the visual impact (Duffin *et al.*, 2002; Rasmussen *et al.*, 2000; Henderson *et al.* 2001; Farrier, 1997:87); and Bone (2004:10) argues that siting offshore can “represent an insignificant visual intrusion”. However, when Tong (1998: 408) says that the visual impact of a wind farm can “be avoided by the selection of suitable offshore sites”, it is clear that the key word here is ‘suitable’.

Indeed, siting offshore – even several miles out to sea – does not automatically solve the issue of visual impact. Crucially, as Henderson says, there may be a need to take into account the visual impact of turbines in an “otherwise structureless landscape” (2002:17). Moreover, this is not an issue that will necessarily be entirely solved by putting wind farms further out to sea. The anti-wind farms campaign group, Country Guardian, quite starkly present this idea: “when you consider that on a clear day the Cliffs of Dover can be seen very clearly from the seashore at Calais, a distance of

over 30km, it still means that whole vistas of open seascape will have disappeared”⁷ with the development of offshore wind farms.

A report for the British Wind Energy Association (BWEA) (2002) notes that the visual impact of an offshore wind farm forms a crucial part of the environmental assessment, just as it does with onshore projects. Important factors in the assessment include wind farm and turbine design; the importance or significance of the seascape and the landscape from which it will be viewed; public access to the seashore; the effects on tourism and recreation. Interestingly, 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).

Moreover, 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%. He says that “because of their attractiveness – scenic beauty and resource abundance – coasts are often overused”. Visual impact is therefore important to address because it is not necessarily therefore the case that offshore wind farms are located away from populations; they may be within sight of a great many people.

A further point about experience and familiarity reducing any visual impact is also relevant here. Still (2001:548) for example describes the development at Blyth in the

North East of the UK and says 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). How far this can be generalised to the offshore situation, where instead of two turbines off an industrial coast, there may be two hundred visible from tourist beaches and beauty spots remains to be seen.

Environmental impact

A second incentive to site wind farms offshore is to mitigate the environmental consequences of their construction. Danielsen (1995:60) for example describes how offshore developments avoid the problems of “destroying the landscape” through the construction of turbines. An emphasis on the prevention of environmental damage is reiterated by others (including Farrier, 1997:85, and Hartnell and Milborrow, 2001:6). Indeed, Tong claims that building turbines offshore means that they will be “freed from the environmental constraints onshore” (1998:400), and Soderholm *et al.* state “that wind power located offshore is considered an environmental improvement” (2007:383) and “minimizes environmental disturbance” (2007:384).

However, clearly, environmental issues are crucial for both on- and offshore developments, and it is only what the specific issues are that varies. Concerns about onshore developments include the effect of access roads and the impact of concrete foundations, whilst for offshore there is a focus on the effect on the seascape, the installation of cables, and damage to the sea bed. Indeed, the vast range of environmental factors that have to be taken into consideration are detailed in the

METOC report for the Energy Technology Support Unit and the DTI (2000).

Similarly, concerns about wildlife are just as pertinent offshore as onshore. Hartnell and Milborrow (2001:25) point out that the effects on the physical change in the habitat, disturbance effect and collision risk for varieties of birds from an offshore wind farm have to be taken into consideration, despite being difficult to assess. Indeed, in their study of the acceptability of a wind farm proposed off Cape Cod in the United States, 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).

Also, even while they may be less of a concern than with onshore developments, noise levels still have to be assessed and taken into account offshore. Soerensen *et al.* (2001a) point out that noise may travel large distances over open water spaces, and they comment that turbine manufacturers must not be neglectful of this. They go on to document the effects that underwater noises and vibrations are predicted to have on porpoises, seals, and species of fish. It may therefore be seen that noise is still an issue with offshore wind; it just may be noise to sea creatures rather than humans which is of primary concern.

Spatial demands

Another problem associated with onshore wind farms is a lack of suitable space. Bone (2004:10) argues that siting offshore is increasingly attractive because the number of suitable available sites onshore is limited; indeed Gaudiosi suggests that it

is directly because of the lack of space onshore across Europe that developers are seeking out offshore sites: see also Duffin *et al.* (2002); Farrier (1997:88); and Tong (1998:399). There may be a scarcity of such space with good wind conditions for onshore turbines (Lange *et al.*, 1999:300), or the land use and planning conflicts encountered with them may deter developers (Henderson *et al.*, 2001; Marsh, 2001:18; Duffin *et al.*, 2002). Kogaki *et al.* describe how these circumstances are repeated in Japan, where the cumulative effective of turbines already built onshore, and a lack of remaining land with adequate infrastructure (such as roads and power cables) to build any more, has lead to a “necessity” for offshore development (2002:304). This may be especially problematic in densely populated countries, and de Vries (1991) describes how Denmark may also have reached saturation point for turbines onshore. In contrast, Danielsen (1995:62) describes how “the potential area offshore for wind farms seems to be unlimited”.

However, developing offshore does not necessarily mean boundless open space in which to build. There is firstly the difficulty of finding suitable locations – taking into account the depth and conditions of the sea bed, and wind resource available.

Hartnell and Milborrow (2001:12) document the particular constraints and exclusions relevant to development offshore such as the slope of the sea bed; regions where dredging concessions existed; known dumping grounds for ammunition, explosives and other hazardous materials; shipping lanes; obstructions such as pipelines, cables and oil platforms; and nature conservation areas.

Secondly, developments offshore have “considerable spatial demands” (Kannen, 2004:177). These may be exacerbated by the establishment of safety zones around

some installations, which may be up to 500 metres square around a site “in order to secure the safety of the installation, other installations in its vicinity, individuals and vessels” (Holmes, 2004:38). The area taken up by an offshore wind farm is also significant in terms of the competing spatial demands from other users. Indeed, Glaeser (2004:201) describes how the “intensification of multiple human demands for resources and space in coastal and marine areas imposes increasing pressures on the coastal ecosystems and leads to competition and conflicts between different coastal stakeholders”. These competing demands may come from a range of sources, including shipping, navigation, recreational and commercial fishing, oil and gas rigs, marine protected areas, tourism and recreation, aqua- and agriculture, urban development, harbour development, coastal defence, nature protections and species preservation. As Glaeser says, offshore “all the various users in each of these fields compete for space and resources” (2004:201).

Conflict with other activities

The lack of space, difficulties of finding suitable locations, and demands of other users mean the potential for conflict. Although Still 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” (2001:548), this seems debatable, as Thompson (2005), and Firestone and Kempton (2007) have demonstrated. Indeed, stakeholder concerns may be just as relevant offshore than onshore, but just come from different groups. Onshore stakeholders include landowners and farmers. Offshore stakeholders include fishers and shipping (Kogaki *et al.*, 2002; Henderson *et al.*, 2002), and even the House of Commons Select

Committee on Transport believes that offshore wind farms are being built too close to busy shipping lanes, thus risking collisions (cited in NATTA, 2004).

Conflicts may occur between these competing demands. For example, while turbines may be designed to have as limited a visual impact as possible from the shore (Jessien and Larsen, 1999:578), navigational requirements may require them to be painted in vibrant colours, or they may have to be brightly lit to be seen by low flying aircraft. Further, Gray *et al.* (2005) carried out extensive research on the conflicts between offshore wind farms and the fishing industry. Exclusion zones around wind farms may interfere with existing fishing grounds, and construction may affect fish stocks and spawning grounds. Gray *et al.* found that when trying to resolve these issues, fishers and offshore wind farm developers often had contrasting views on the form and amount of appropriate compensation, and the consultation process through which this was achieved – resulting at times in fierce distrust and conflict.

It may not therefore simply be a case that the site for an offshore wind farm “should avoid areas for fishing, recreation, and the main navigational channel” (Soerensen *et al.* 2001a:16), because such a site where there is no impact on the seascape or those who use it may not exist. Indeed, this may be why the DTI Press release that accompanied the announcement of the latest round of bids for offshore wind farms warned that the impacts of development would mean that “developers cannot assume that any site within the areas for which The Crown Estate is inviting tenders will be problem free”⁸. It seems certain that it will not.

Public opinion

Finally, siting wind farms offshore is often perceived as a way of reducing public opposition. Farrier states that “offshore sites should suffer much less from the NIMBY attitude which can effect onshore sites” (1997:86), and Tong states that offshore would mean developing “without public opposition” (1998:400); see also Marsh (2001:18). Soderholm *et al* (2007) argue that “even though offshore wind power is generally more expensive than land-based mills, this may be offset by a lower risk of public opposition for offshore instalments”, and that “wind parks offshore are typically preferred over onshore parks” (2007:384).

Whether opposition to wind farms can safely be described as ‘Nimbyism’ has been debated elsewhere (Bell *et al.*, 2005; Devine-Wright, 2005; Wolsink, 2007b, 1994). The point here is that, contrary to the prevailing view, opposition to offshore wind farms certainly does exist. For example, this has been documented in the case of the proposed offshore wind farm off Cape Cod – Firestone and Kempton (2007) studied the demographic factors relating to opinion about the wind farm such as age, education and income, and the positive and negative impacts the project was perceived to entail; Kempton *et al.* (2005) discuss the values local residents drew on when forming their opinions; and Thompson (2005) describes the newspaper coverage of the debate. There is also work in progress using various methodologies to understand perceptions of wind farms off coast of Northern Ireland. This research is valuable because, as Soerensen *et al.* (2001b) point out, both sea users *and* the public more generally may be concerned about the impacts of a wind farm, and “the acceptability of wind-power offshore cannot be taken for granted” (Wustenhagen *et al.*, 2007:2686).

This initial work, starting to address the gap identified by Henderson *et al.* (2005) of a lack of studies of public perceptions of offshore wind farms, is interesting and useful. It might also be possible to consider public acceptability at a slightly broader level, and in light of the limited amount of research specific to offshore, apply some of the research on resistance to onshore wind farms to the situation offshore (as Henderson *et al.*, recommend). Toke (2005) found that local resistance to onshore applications was the main reason why they were refused permission by local councils. If opposition exists to offshore applications, there is no reason to believe that this pattern will not be repeated.

Several key reasons for opposition onshore have been highlighted; these factors will now be explored with some of the preliminary evidence from offshore case studies.

The local and the global

One of the reasons identified for protest against wind farms onshore is the disjuncture between the 'local' and the 'global'. Fears about global warming, climate change and an energy supply crisis may be far removed from the contingencies of everyday life. It is at the local level, where wind farms are built, that the impact of international agreements and national policies are felt. Haggett and Vigar (2004) examined opposition to wind farms onshore, and point out that "while there may be national and international benefits from a reduction in the use of fossil fuels, the proportional reduction in carbon dioxide emissions for each person who lives near a wind farm may be a small and intangible compensation" (2004:289). As Wustenhagen *et al.*

(2007) note, a key issue for wind power is the translation of national policy objectives into locally accepted policies.

The point is that this is just as applicable offshore. For example, Glaeser (2004:204) notes that 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”. Kannen (2004:177) describes how this plays out in one particular location, Schleswig-Holstein 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”, and there may be benefits in terms of technological innovation and economic growth, as he says, “in Schleswig-Holstein, the resident population is unsure whether it will actually be able to benefit from the expected positive developments”. Indeed, in the debate over a wind farm proposed at Cape Cod, Kempton *et al.* (2005) describe the disparity between the global benefits of wind power being expounded by proponents of the scheme, and the effect on the local vicinity stressed by opponents.

Local social and historical context

Research on opposition to onshore wind farms has discussed the importance of ‘place’, the local social and historical context of an area, and the attachment that people have to their local environment. Commenting on a previous study of responses to an onshore wind farm, Devine-Wright (2005a:134) notes the “relevance of place processes, both in describing how local opinion is constructed and in predicting perceptions of the development”.

Preliminary evidence does seem to indicate that this is equally the case offshore, as these issues have been the subject of new research carried out into the perceptions of a wind farm proposed off the coast of North Wales. The initial application for the Gynt-y-Mor wind farm was submitted in November 2005, and if permitted will include up to 200 turbines. The wind farm will be closest to the town of Llandudno, but will be visible along the North Wales coast and from Merseyside, and be in addition to three other wind farms either operating or consented along the coastline.

Interviews with local people, observation at public consultation events, and documentary analysis of the proposals and literature produced by an opposition group have indicated that the wind farm is causing controversy. This study is part of ongoing research at Newcastle University into issues of the social acceptance of renewable energy and is continuing; but initial evidence reveals underlying discontent, not just with the contingencies of the plans, but the way in which they were being enacted.

In terms of the importance of ‘place’, two key points are relevant here: the area is noted as being of particular beauty and value; and it generates a huge tourist income (the relevance of which in wind farm debates is noted by Jobert *et al.*, 2007).

Opponents of the wind farm argue that the proposed site is inappropriate not just because it happens to be local to them, but because it is rare, beautiful, and valuable on a national scale. Llandudno is a famed Victorian town which retains much of its original character, and the bay is formed by two headlands, the Great and Little Orme, which are archaeologically and geologically significant internationally. Protesters argue that “the developer’s application takes no account of the unique status and

character and of the outstanding natural beauty of Llandudno and its bay”⁹. This particular location is also significant because of tourism. The town of Llandudno alone generates over a fifth of all the tourist income in Wales, and any perceived threats to this are taken very seriously. This is particularly relevant because of the scale, size, and cumulative effect of the proposal. A large number of turbines are planned, and the site will be visible from a wide area. Further, the area already has one wind farm operating (North Hoyle) and two further permitted (Rhyl Flats and Burbo Bank). A local group formed to protest against the proposal argues that there will be no way of ‘escaping’ the wind turbines, and that people will avoid the whole area because of this: “A big concern is the threat to tourism. Industrial sites are not tourist hotspots and the developer’s plans will industrialise our bay by fencing it in with a ring of steel”¹⁰

Control and ownership

Related to the disjuncture between local and national priorities, and the importance of the context in which opinions are formed, are issues over the ownership and control of any development. Negative attitudes that people have towards a wind farm may be exacerbated by feeling that the development is being driven by distant, profiteering developers (Elliott, 1994), with operations controlled by financial interests far removed from the community (Toke and Elliot, 2000), with little control of any aspect of it maintained by local people (Toke *et al.*, 2007; Wustenhagen *et al.*, 2007; Jobert *et al.*, 2007; Rand and Clarke, 1990). Huijts *et al.* (2007) have discussed the extent to which trust in actors involved in renewable energy decision-making (such as government, industry and NGOs) impacts on the acceptability of any development, and that level of trust is determined by the perceived competence and motivations of

those actors. Wolsink (1996) goes further to state that often people are not against turbines per se, but are primarily against the people who want to build them.

There is preliminary evidence to suggest that this pattern is being repeated offshore. In North Wales, it was clear that local ownership or control was not something the local people believed they had; indeed, the lack of this was an issue for them. Briefly, it was felt that this was a project where local disadvantage would be sacrificed for the national gain; and in this case, a Welsh disadvantage for a British or English gain. This was emphasised by a lack of local people involved. The developers are a national 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 and English was felt to be a “PR sop” rather than a indication of a local character to the proposal:

“There’s no one here from Llandudno. Why is there no one here who actually lives here? None of them know anything about what it’s like to live here”¹¹

The disadvantages that local people felt that might face – reduced tourist income, reduced amenity for example – were not balanced by any tangible benefits; cheaper electricity for local residents was mentioned as one scheme that might make people more favourable towards the development, but this had been dismissed.

Planning, participation, and the need for consultation

Finally, research has highlighted that the development process and the nature of the planning system affect the decisions that are made and the formation of opposition towards wind energy. Haggett and Vigar (2004) argue that if people feel distanced or

excluded from decisions that effect them, this encourages suspicion and hostility towards those decisions (see also Jobert *et al.*, 2007; Gross, 2007). Indeed, Wolsink (1996) contends that a lack of communication between local people, developers, and decision makers is the ‘perfect catalyst’ for converting local scepticism and negative attitudes towards wind farms into actual actions against specific projects, and in later research (Wolsink, 2007a:2694) states that “if local interests are not given a voice in the decision-making processes, conditional supporters may turn into objectors”.

Research and guidance documents repeatedly state that a way to address this is to inform, consult, and engage with the public and stakeholders (Agterbosch *et al.*, 2007). The British Wind Energy Association (2002) for example gives best practice guidelines stating that developers should participate in a “dialogue” with stakeholders, implying a two way and on-going interaction and not merely a programme of information (a point reiterated by Jessien and Larsen, 1999:580; and Goodall, 1999:59). Ideally, they should consult as early as possible in the process (Soerensen *et al.* 2001a:30); and allow the public to see the results of the consultation. The planning process for offshore projects should therefore be as open as possible to allow local communities to have some influence in the project (Petersen and Neumann 2003; Henderson 2002:17). While public involvement is very challenging it is highly recommended; as Soerensen *et al.* comment “if a sense of control is created through an open and dynamic process, the confidence of the public may be achieved” (2001b:328). Indeed Kempton *et al.* (2005:126) note that perceived “unfairness and inadequacy of the permitting process” was a factor in opposition, and that increased public control over wind power deployment can help to mitigate that protest (see Firestone and Kempton, 2007; Firestone *et al.*, 2004).

Two case studies illustrate this. Firstly, Kjaer (2004) describes the process of the development of the Horns Rev II offshore wind farm off the coast of Denmark. Local people were asked to respond to the plans, and these responses (including opinions on distance of the turbines to the shore, day and night time use of lights on them, and fishing exclusion zones) were used in the assessment for the final locations of the turbines. Kjaer suggests that the open and flexible development process was one of the factors that led to very little public resistance to the project. He notes that the growing public acceptance was due to openness during the planning process, a large amount of information given to local people, and the development of co-operation with local councils and stakeholders.

The second case study is Middelgrunden offshore wind farm, in Copenhagen harbour¹². This is a particularly interesting example because it is a very prominent location – but the wind farm was designed to enhance this. It was constructed on the lines of the historical defences of the city, and presented as such to the local people. There was government support to explore the options available in terms of the technical and environmental issues, and funding for pre-investigations included public hearings. This led to a high information level from the developers, with leaflets, public meetings, news articles, and television coverage. Further, the open planning process invited a broad spectrum of people to participate.

From this, an “understanding” (Soerensen *et al.* 2001b:329) was gained during the planning process for Middelgrunden; suggesting not just that the developers listened to the concerns of the local people, but actively made efforts to appreciate their points

of view. Soerensen *et al.* comment further that the process generated a wide-spread appreciation and social acceptance of the chosen location and layout of the farm. It is also important to note that the developers responded to public objections and action was taken; for example, after public criticisms, the number of turbines in the plan was reduced from 27 to 20 and the layout changed from three rows to a sweeping curve (although the size and capacity of each turbine was increased slightly so that the same total amount of electricity could be generated). Another factor that has to be taken into consideration is that Middelgrunden is a co-operative, with 50% of the shares owned a Danish utility and 50% by local shareholders. The conclusion that Soerensen *et al.* draw is that while public involvement is challenging, it yields confidence, acceptance and support.

There are a number of points to make in relation to this. While the cases documented here do seem to be instances of the public being genuinely involved, the question remains as to the specificity of this situation. Did the fact that these were offshore developments have any influence in the extent to which the public were involved and listened to? What effect does financial involvement, and the opportunity to be part of a co-operative have on public support and opposition? And what influence do cultural factors play; the Danes have considerably more wind energy than in the UK, and a myriad reasons could be identified as influential (see for example the Centre for Sustainable Energy Report, 2005; Breukers and Wolsink, 2007). For the present however, the question is about whether these same processes of open and flexible dialogue would produce the same outcomes in a UK setting.

What is interesting is that initial evidence from the Gwynt-y-Mor proposal suggests that the pattern in the UK – of a lack of communication and consultation leading to mistrust and opposition – is being repeated. Two key points are particularly pertinent: that local people felt excluded from the decision making process; and that the concerns of local people were ignored. Firstly, in their letter to the Secretary of State outlining their objections to the proposal, a local action group ('Save our Scenery') state that "the developer's case in the documentation does not accurately reflect public opinion with regard to Gwynt-y-Mor, and this raises serious ethical considerations"¹³. Opponents of the proposal describe distrust of the developer, a belief that the information being presented is imbalanced, inaccurate and misleading, and that this does not allow people to make realistic judgements about the proposal. While the developer did hold a series of meetings and open days at sites along the coast, made documents pertaining to the development available at public buildings, and conducted a survey of tourists visited affected areas, it was felt that there was a lack of 'real' consultation – local residents suspected that it was a *fait accompli* decision. Residents at local meetings felt that their points were ignored, and key local stakeholders such as hoteliers felt that their views had not been taken in account. After preliminary meetings, four open days took place along the coast, where information about the development including photo montages were displayed. Staff were available to answer questions, however, the flow of information was one-way only. Points raised by people attending were not responded to, acted upon or even recorded. These were sessions designed to give information only, not to engage in dialogue. The outcome of the Gwynt-y-Mor application remains to be seen, but it has certainly not progressed smoothly or without considerable protest thus far.

Discussion

This paper has briefly considered some of the key areas in the research on wind farms, both on- and offshore. It has considered together and contrasted a wide variety of research, and highlighted some of the shortcomings of research on this topic – the importance of which in policy, political, and planning terms is only likely to increase. This paper has shown that developing wind farms offshore is often considered a solution to the problems encountered with onshore sites, in terms of visual and environmental impact, planning, and public opinion, but that the situation is not as simple or as well understood as that. Indeed, very few of the issues are unique to onshore situations. Environmental and spatial considerations are just as pertinent. Public participation in the development is an issue whether it is on- or offshore. The initial empirical evidence from the North Wales case study is not intended to be conclusive, but is a further step in examining public perceptions of offshore wind farms, and highlights the fierce and ongoing disputes that exist. Soerensen *et al.* (2001a: 29) point out that further research on offshore wind energy, and in particular public responses to it, is required. With more offshore wind farms planned, and with the battle lines being drawn at places such as North Wales, this surely seems to be necessary.

What then is the role for spatial planning? There is certainly a need for balance between the push for offshore wind (particularly in the light of the problems encountered onshore) and thorough evaluation of the impacts. Crucially, there is also the need for balance between conflicting demands. Glaeser (2004:201) describes the importance of spatial planning as an instrument of mediation between these various stakeholders, and Stevenson and Richardson (2003) note how vital it is to include

stakeholders in deliberations over renewable energy. Indeed, Wolsink (2007b:1204) documents the need for “openness in the process and the avoidance of technocratic and corporatist and elite decision-making” about wind farms. However, as Haggett and Vigar (2004) point out, negotiations among many stakeholders with widely differing views through the different arenas and fora (that it typically takes to get a proposal through the planning system) takes genuine skill; and as with all major planning decisions there is a danger that it can all unravel at any stage. There is also the difficulty, as Nadai (2007) discusses, of achieving a balance between the opportunity for this open participation, and providing a framework for territorial planning. Indeed, Wilson (2006:9) points out that spatial planning in relation to the “nature and politics of the issue of climate change” leads to complex and difficult decisions.

There is however, in spite of the difficulties and not unique to offshore wind, the need for openness and flexibility in the processes of decision making. It is also clear that, as in other policy areas within the remit of the planning system, *early* dialogue with stakeholders and communities is critical. But there are other challenges for spatial planning.

The first concerns the auspices under which negotiations and consultations with stakeholders and the public over offshore wind farms are carried out. While greater involvement in the decision making process might intuitively be a good thing, the motivations for it are not always apparent. Is it to increase democracy, trust and fairness in the process, allow more people to have a say, and to attempt to reflect the will of the majority? Or is it carried out to help smooth the way towards the

construction of a wind farm, and to get key stakeholders and the public ‘on side’, be seen to be doing so, and to remove any obstacles in the way?’ Yearley *et al.*’s (2003) identification of three key objectives behind encouraging participation is useful to consider here. The first of these is a pragmatic approach, where public involvement is seen as a way of increasing the likelihood of a successful siting. The second reason is that people have a right to participate in things that may affect them, and Gross (2007:2734) has unpacked this concept further to explore the associated issues of trust and fairness in participation. She makes a distinction between perceptions of fairness of *outcomes* and fairness of *process*, and in her interesting discussion argues that while both of these are vital for encouraging engagement and acceptance. For some, a fair process is most important because it “will allow discussion of the merits and impacts of the proposal, thereby helping determine what a good outcome is”. Gross concludes that people should therefore be allowed to participate so that they “have the opportunity to speak and be heard” and ensure that this process is ‘fair’ (see also Jobert *et al.*, 2007, and Huijts *et al.* 2007 on the importance and impact of trust in such debates). The third reason identified by Yearley *et al.* for encouraging participation is because local people may be seen as experts, whose rich and full understanding of their local environment may differ from an outside ‘expert’ view (the validity of which has been demonstrated by Irwin, 1995; and Wynne, 1989). However, Soerensen *et al.* (2001a), in their descriptions of the planning processes for offshore wind farms, seem to imply that involvement should be encouraged for pragmatic, rather than say, democratic reasons: the goal is to achieve a successful application to build a wind farm. This seems to be a view shared by Petersen and Neumann (2003), when they state that early consultation of the public and other

stakeholders during an offshore wind farm application process can speed up the procedure.

Secondly, and related to these issues of participation, fairness and trust, the processes used to involve stakeholders or the public may not be as open and influential as they may seem, or were intended to be. It may be possible to circumvent them, not everyone has access to them, and some will be able to exert more influence over them than others (see for example Tewdwr-Jones and Thomas 1998:138). In an example of this, Soerensen *et al.* (2001b:329) document the large number of local groups and committees and the several thousand shareholders who actively supported the Middelgrunden offshore wind farm project. This support is interesting because, as it has been noted in planning decisions, it is usually only the criticisms of a project that are aired; if people are in support, they rarely bother to write to their council and tell them so (see Pasqualetti, 2001:69, for example on the “public silence” which may be difficult to interpret). Almost as an aside Soerensen *et al.* mention the “relatively small group of yachtsman, fishermen, individuals and politicians [who] remained in opposition”. This is interesting; and who these groups are is significant too. While they are a “relatively small” group, their views are may be seen as 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 perhaps part of a wider debate about the processes for the development of wind power, which it is not possible to fully discuss here (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); but it leaves questions about

the extent, efficacy, and equality of public and stakeholder involvement in wind farm planning.

The third point is about the possibilities for involving 'local' people in the decision making processes. The encouragement of community involvement with planning procedures and decision making about renewable energy has been well documented. In South Wales, Devine-Wright's (2005b) study of onshore wind farm development found a majority of respondents in favour of the involvement of local people. Indeed, in their study, Upham and Shackley (2006) conclude that one option for implementing renewable energy is negotiated agreements between regional renewable energy agencies, local authorities, and local people "on the nature and limits of renewable energy within a locality" (2006:60). But who determines what a 'locality' is and who those 'local people' affected are? And how does this apply to offshore, where there is an increased spatial separation between 'local' people and any development? Gross (2007) has shown that although decisions that involve communities are laudable, 'local people' are not a homogenous group, and decisions which are seen to benefit some sections of a community over others will cause protests and disputes. While the involvement of (local) people might be ideologically positive, it is clear that there are issues with the premises and procedures through which it is undertaken, and practical problems with attempting to carry it out – all of which have to be considered and addressed.

The increasing demands on space and resources mean that more effective spatial co-ordination is required, to both manage these, and balance them against environmental considerations. Within the wider context of climate change, and concerns about

energy supply and energy security, the importance of making such decisions becomes more pressing; and more complex. However, a realisation of this is crucial if the political will to implement offshore wind farms – and to meet the ambitious renewable energy targets – is to be realised.

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¹ See <http://news.bbc.co.uk/1/hi/programmes/breakfast/3265421.stm> for details

² See <http://www.ruralgateway.org.uk/cgi-bin/item.cgi?id=973&d=132&f=46>

³ The Crown Estate, through the management of the Crown Estate Commissioners, grants leases for the installation of wind farms; see Cassidy and Cooksley (2001a), and (2001b) for details of the permitting process and the consents that have to be sought.

⁴ Details and statement from the Department of Trade and Industry website, <http://www.dti.gov.uk/files/file10725.pdf>

⁵ This structure of this paper draws on the "empirically informed theoretical examination" used by Parker and Stanworth (2005:319) among others.

⁶ See for details <http://www.gnn.gov.uk/environment/detail.asp?ReleaseID=189520&NewsAreaID=2>

⁷ See <http://www.countryguardian.net/effectiveness.htm>

⁸ DTI Press release 14th July 2003: obtained from the DTI website, accessed October 2003

⁹ See http://www.saveourscenery.com/what_you_need_to_know.htm

¹⁰ 'Save our Scenery' chair John Lawson Reay; available from:

http://newsvote.bbc.co.uk/mpapps/pagetools/print/news.bbc.co.uk/1/hi/wales/north_wales

¹¹ Comment at a public information session held by the developer, November 2005.

¹² These details are drawn from Jessien and Larsen 1999; Soerensen *et al.* 2000; 2001a; 2001b; 2001c.

¹³ Available from http://www.saveourscenery.com/Submission_letter.htm