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Re-visiting the ‘Social Gap’: Public Opinion and Relations of Power in the Local Politics of Wind Energy.Derek Bell^a, [Claire Haggett, Tim Gray, and Jo Swarfield et al...](#)^a School of Geography, Politics and Sociology, Newcastle University, Newcastle upon Tyne, UK

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Abstract

This article revises in the light of recent research a previously published and widely cited explanatory framework for considering public responses to wind farm developments (Bell *et al.* 2005). In the preceding work, two gaps were distinguished: a ‘social gap’ between the high support for wind energy reported in surveys and the low success rate for wind farm applications; and an ‘individual gap’ whereby an individual supports wind energy in general but opposes a local wind farm (NIMBYism). The popular assumption that NIMBYism was the only explanation for the ‘social gap’ was contested. Instead, three explanations of the social gap were provided – democratic deficit; qualified support; and NIMBYism – and a range of different policy responses were suggested. In this article, this analysis is re-visited in order to take account of the theoretical and empirical developments which have taken place since its publication. The original explanatory framework is expanded and revised and new conclusions are drawn about the likely causes of the ‘social gap’.

Keywords: Wind energy; NIMBY; place attachment ******Introduction**

In 2005, we asked the question ‘if approximately 80% of the public in the UK support wind energy, why is only a quarter of contracted wind power capacity actually commissioned?’ (Bell *et al.* 2005, p. 460; henceforth *SGI*). We suggested that ‘NIMBYism’ was not likely to be a sufficient explanation for this ‘social gap’, and we proposed two additional explanations and discussed their implications for policy. ~~In this paper, we critically re-visit our original argument in light of recent research. In *SGI*, we explored the apparent disjunction between high support for wind energy and low installed capacity, a disjunction that we termed the ‘social gap’, and set out three explanations. The Our first explanation was a ‘democratic deficit’ (*SGI*, p. 461), whereby the decision-making processes are dominated by the small number of unrepresentative wind farm opponents. Our The second explanation for the social gap was that proponents are ‘qualified supporters’ of wind energy (*SGI*, p. 463). So, while surveys report high levels of support, that support might actually be qualified or conditional in some way. Our The third explanation for the social gap was ‘self-interest’ or ‘NIMBYism’: people support wind farms but not in their backyard (*SGI*, p. 465). We suggested that further empirical research to better understand the causes of the ‘social gap’ was important – not least because different policies for promoting wind energy would be appropriate depending upon different causes.~~ The aim of this paper is to re-visit the account of the ‘social gap’ that we offered, review the evidence that has accumulated since *SGI*, and take forward our explanations for the gap between public support and siting success.

The paper is divided into the following sections. First, we discuss the wider significance of the social gap. Second, we ‘re-measure’ the social gap. Third, we re-consider our explanations of the social gap and present a new framework for analysis. Fourth, we incorporate a revised typology of public attitudes into our framework. Finally, we reflect on relations of power in the local politics of wind energy, before our concluding remarks.

1. The wider significance of the social gap

In *SGI*, we presented the ‘social gap’ as a puzzle: why is there a low success rate in planning applications for wind farms when there is such a high level of public support for wind energy? We continue to believe that understanding the causes of this social gap is important if the UK’s ambitious targets for wind energy capacity are to be achieved (DECC 2011). Moreover, it may have wider significance in two respects.

First, the social gap may not be confined to wind energy but may also apply to other forms of renewable energy, such as solar energy, hydroelectric energy and energy from biomass. Research suggests that there are high levels of public support in the UK for solar (87%) and hydroelectric (76%) and majority support for biomass (54%) (UEA/Mori 2005 cited in Pidgeon *et al.* 2008, p. 75). However, the installed capacity of all

three types of energy remains relatively low (DECC 2012).¹ More careful examination of the evidence could assess whether other forms of renewable energy experience a social gap. If this is the case, any lessons from studying the social gap in wind energy politics may be more broadly applicable to other renewable energies.

Second, more ambitiously, the social gap may be a useful concept for thinking about the relationship between public opinion and political outcomes in democratic politics more generally. There may be many issues where majority public opinion – as reported in public opinion surveys – appears to favour an outcome that is not delivered by the political process. ~~If so, the social gap issues may be. So, we might see cases where there is a social gap as prima facie problems for a polity that aspires to be democratic. The existence of a social gap on an issue is not just an issue for policy makers seeking to promote a particular policy. It should also~~ be a prima facie concern for advocates of majoritarian democracy.

2. 'Re-measuring' the social gap.

In *SGI*, we introduced the social gap in the context of wind energy by claiming, following Toke (2002), that approximately 80% of the public in the UK support wind energy in public opinion surveys but 'only a quarter of contracted wind power capacity [is] actually commissioned' (*SGI*, p. 460). Other authors have subsequently claimed that there is a 'social gap' in other countries, including the U.S. (Phadke 2011), New Zealand (Graham *et al* 2009) and Australia (Hindmarsh and Matthews 2008). However, the evidence base for these claims has been questioned. For example, Aitken argues that since 'within the literature references to opinion polls and other surveys are typically brief', therefore, the 'basis for the prevailing belief that the majority of the public supports wind power remains largely unsubstantiated' (2010a p. 1835). Moreover, she has also challenged the claim that the success rate in planning applications for wind energy is low (Aitken *et al.* 2008). In this section, we briefly examine the available evidence for the UK.

Whitmarsh *et al.* (2011, p.49) report that 'nationally representative surveys have shown that, depending on the exact question asked, around 80% of the British population have favourable views of wind energy'. Whitmarsh *et al.* cite five surveys published between 2006 and 2008. The results of those surveys are presented in table 1 with data from two other nationally representative surveys conducted in 2003 and 2011, including the most recent Eurobarometer survey (March 2011) to ask about wind energy. Although different surveys ask different questions and allow different answers (see table 1), nevertheless – however, the data from these seven surveys supports the claim that a large majority of the UK public (approximately 80%) favour wind energy while approximately 50% 'strongly' favour wind energy. This provides support for the first part of the 'social gap' claim, namely, that opinion surveys show a consistently high level of public support for wind energy.²

TABLE 1 HERE

The second part of the social gap claim (that only 25% of proposed wind energy projects come to fruition) might be understood in more than one way. The relevant data could be the success rate in wind energy planning decisions; but this may be misleading because some applications might be withdrawn before decision or approved developments might not be built. Therefore, we should be interested in the installed capacity relative to the number of planning applications. We provide data on both.

Table 2 presents data on the wind energy planning submissions, approvals and rejections and the number of developments built in the UK over the period 2004-10. The data shows that over 50% of applications that were decided in the period were approved. The success rate is much higher than the 25% that we claimed in *SGI*, suggesting that the gap between high public support for wind energy and the success rate in planning decisions is much less than we thought. There is some evidence to suggest that the success rate in planning decisions may be higher now than it was up to 2001 (Toke 2005a). However, using this data, it seems that the social gap may never have been as large as we originally suggested – and may be smaller now.

In contrast, if we compare data on the number of onshore wind planning applications submitted and the number of developments built in the period 2004-10, the social gap appears larger. In total, planning applications for 854 developments with a total capacity of 16921.33 MW were submitted but only 201 developments were built with a total capacity of 3350.55 MW. So, the number of developments built was only 23.5% of the number of applications submitted. Of course, it may be that some of the applications submitted may have been (or will be) built after 2010. However, it may also be that some applications were withdrawn or that developments that were approved were not built. So, as we might have expected, the data on installed

¹ At the end of 2011, the installed capacity for large scale hydro, plant biomass and solar energy in the UK was 1471MW, 1159MW and 976MW, respectively (DECC 2012, p.47).

² Aitken (2010a) also raises questions about survey methods, epistemology and funder bias (see also Ellis *et al.* 2007 for a discussion of the limitations of survey based research). These are important questions that may lead us to question the significance of survey results – and, derivatively, the significance of the social gap – but they do not challenge the claim that opinion surveys show high levels of public support for wind energy.

capacity relative to planning applications suggests a larger social gap than the data on success rates in planning decisions. It is not clear that either interpretation provides an unproblematic account of the ‘outcomes’ of wind energy politics. However, both interpretations support – to varying extents – the claim that *prima facie* there is a gap between the ‘inputs’ (80% public support for wind energy) and the ‘outcomes’ of wind energy politics.

TABLE 2 HERE

3. Re-considering explanations of the social gap: a new framework for analysis

In *SGI*, we distinguished three explanations of this social gap: democratic deficit; qualified support; and self-interest. The initial motivation for the paper was to contest the assumption that NIMBYism (or self-interest) was the only plausible explanation of the social gap. Our aim was to explore the theoretical space for alternative explanations and to consider the different implications for policy of those alternative explanations. Our simple threefold typology of explanations has been widely cited (Wustenhagen *et al.* 2007, Wolsink 2007b, Walker and Devine-Wright 2008, Devine-Wright 2009, Van der Horst and Toke 2010, Cowell *et al.* 2011). In most cases, our three alternative explanations have been reported as part of a more general review of the literature on wind energy politics (Barry *et al.* 2008, Eltham *et al.* 2008, Warren and Birnie 2009, Phadke 2010, Swofford and Slattery 2010, Evans *et al.* 2011, Jepson *et al.* 2012, Waldo 2012). More importantly, interestingly, in a few cases, our typology has been used to inform analysis of original empirical data (Jones and Eiser 2009, Sturzaker 2011). In these cases, the tendency has been to argue that the data supports the ‘qualified support’ explanation of the social gap (Jones and Eiser 2009, Sturzaker 2011).

However, our typology of explanations has also been criticised. Agterbosch *et al.* (2009) argue that our threefold typology of explanations is problematic for two reasons. First, they ‘notice that these explanations are not mutually exclusive’ (2009, p. 205). Second, they claim that these three explanations ‘do not provide a proper picture of the complex and interactive nature of the formal public policy framework and social conditions at the operational level of implementation’ (2009, p. 405). In response to these criticisms, we have expanded and revised our explanatory framework.

In *SGI*, we were not clear about whether our three explanations of the social gap were mutually exclusive. On the one hand, we presented our three explanations as *independent and competing* accounts of the cause of the social gap. On the other hand, we ‘emphasised the importance of empirical research to examine the relative contribution of [these] explanations to the social gap’ (*SGI*, p. 474). Our apparent inconsistency reflected a problem with our account. We failed to adequately distinguish two aspects of each explanation. Each explanation addressed two distinct questions. First, what is the makeup of public opinion? Second, what are the relations of power in local wind energy politics? Disentangling these two questions helps us to address both of the concerns raised by Agterbosch *et al.*:

First, disentangling the two questions helps us to understand how our three explanations are related to each other. The ‘self-interest’ and ‘qualified support’ explanations make competing claims about the makeup of public opinion. On one account, the majority of people are ‘NIMBYs’. On the other account, the majority of people are ‘qualified supporters’. The democratic deficit explanation also makes a claim about the makeup of public opinion: a minority of people are ‘unqualified opponents’ of wind energy. However, notice that this [last](#) claim is not inconsistent with the claims made about the makeup of public opinion in the other two explanations: the minority of people can be unqualified opponents and the majority of people can be qualified supporters (or NIMBYs). All three accounts also make claims about the relations of power in local wind energy politics. The democratic deficit explanation claims that power lies with the (minority) group of unqualified opponents. In contrast, the other two explanations both assume that power lies with the majority (who are either NIMBYs or qualified supporters).

Second, distinguishing the two questions shows that our three explanations do not exhaust the logical space of alternative explanations for the social gap. Explanations can vary along two dimensions: the makeup of public opinion; and the relations of power in local wind energy politics. Our three explanations took very simple positions on each dimension. We might imagine many alternative explanations of the social gap that take more complex positions on each dimension. On the public opinion dimension, we might, for example, hypothesise that the makeup of public opinion could be such that there is no majority group but rather a plurality of qualified supporters and minority groups of NIMBYs, unqualified opponents and unqualified supporters. On the political power dimension, we might imagine that the relations of power between different stakeholders, including the public, developers, energy companies, non-governmental organisations, local authorities, planning inspectors, and central government departments, might not consistently or straightforwardly produce either majority rule or minority rule in the local politics of wind energy.

In the next two sections, we consider what we can learn from the recent literature about the makeup of public opinion (Section 4) and the relations of power in the local politics of wind energy (Section 5).

4. Revised typology of public attitudes

The public opinion surveys that we reported in Section 2 are based on an over-simplified typology of public attitudes: ranging from ‘strongly favour’ to ‘strongly oppose’. Similarly, popular media coverage of wind energy disputes is often based on a simplistic account of public attitudes: opponents of wind energy are NIMBYs (Jenkins 2012). In *SG1*, we offered an alternative typology of public attitudes, which included qualified supporters, NIMBYs and unqualified opponents – and suggested that they might be key actor ‘types’ in wind energy politics. In this section, we draw on the recent literature on public attitudes to wind energy to address two questions. First, does our typology of public attitudes require revision or refinement? Second, what do we know about the relative proportions of different attitude ‘types’ in the UK population?

The recent literature suggests three refinements to our typology. First, we should revise our typology to include a new attitude type: the ‘place-protector’. This category draws theoretical inspiration from work in environmental psychology and geography on ‘place attachment’ (Devine-Wright, 2009, Devine-Wright, 2011, Devine-Wright and Howes, 2009). Place attachment is defined as ‘positively experienced bonds, sometimes occurring without awareness, that are developed over time from the behavioral, affective and cognitive ties between individuals and/or groups and their sociophysical environment’ (Brown and Perkins 1992, p. 284 cited in Devine-Wright 2012, p. 3). On this account, landscape concerns are not simply based on an aesthetic or visual appreciation of the landscape, but reflect the experience of living or spending time in a particular place. The ‘place-protector’ is not a qualified supporter because she does not impose a universalisable qualification on her support for wind energy, such as wind farms should not be located in areas with particular landscape features. Neither is the ‘place-protector’ a NIMBY because she does not oppose local development for self-interested reasons. Instead, the ‘place-protector’ opposes a local development because of the value that she sees in that particular place while not seeing the same value or remaining agnostic on the value of other places where developments might take place.

Recognising this new attitude type is practically important because the place-protector may respond differently from NIMBYs and qualified supporters to development policies and practices. For example, the place-protector may be less impressed than the NIMBY by financial incentives offered by developers. Similarly, the place-protector might understand the impact of ‘industrial’ or ‘technological’ developments in a place quite differently from someone whose concerns are purely about visual impact on a landscape (Pasqualetti, 2001, McLachlan 2009, 2010).

Second, we should refine our typology by distinguishing some of the different types of conditions that qualified supporters require acceptable developments to meet (for example in relation to noise – Haggett 2010, size – Warren and Birmie 2009, number – Barry and Chapman 2009, environmental protection – Graham *et al* 2009, community involvement in decision making processes – Fisher and Brown 2009 and fair distribution of economic benefits – Aitken 2010b). Devine-Wright’s review of the literature identified 17 types of qualifications and categorised them into eight broad categories, including ‘physical’, ‘contextual’ and ‘local’ (Devine-Wright 2005, p. 135). This typology builds on previous work (e.g., Wolsink 2000) but provides a more systematic and comprehensive framework for classifying the reasons that people oppose developments. It has been used by other researchers with some proposing refinements where their data has suggested gaps (Graham *et al* 2009). We believe that this is a useful strategy for developing a practical understanding of qualified support, which could be used by researchers (as well as policy-makers and developers) to analyse the detailed makeup of public opinion and the relative frequency of particular types of concern about wind energy.

Third, we should also refine our typology by recognising the importance of considering the *relationships between* the different types of conditions that qualified supporters impose on their support for wind energy. For example, Haggett and Futak-Campbell (2011) use discourse analysis to identify various discursive positions, such as ‘champions for the planet’, and ‘clean energy sceptics’, which include a range of inter-connected qualifications and views. Similarly, Ellis *et al.* (2007) use q-methodology to distinguish four distinct objector discourses and four supporter discourses, and argue that ‘each objector discourse is constructed from a combination of different elements’ (2007, p531). We believe that our understanding might be significantly enhanced by applying q-methodology or discourse analysis to a much larger dataset based on interviews with a statistically representative sample of the population. If we could categorise qualified supporters based on the clusters of conditions that they believe developments should meet, we could determine which types of qualified supporters are likely to be relatively easy to satisfy with well-designed developments proposals and which are likely to be very rarely satisfied by a development proposal.

Based on our reading of the recent literature on attitudes to wind energy, we have suggested three revisions or refinements to our typology of attitudes. The second question that we want to address is: What do we already know about the relative proportions of different attitude ‘types’ in the UK population? A critical reading of the recent literature suggests three provisional conclusions.

First, much of the social science literature on wind energy argues that the NIMBY label oversimplifies and mischaracterises local opposition to wind energy developments (Warren and Birmie 2009, Aitken 2010a, Jessup 2010, Haggett 2011), and we agree that this is indeed the case when the label is used as a simple descriptor for all and any protest (e.g., Feldman and Turner 2010). It has been argued that we should study how

advocates of wind energy use ‘NIMBY’ discursively to de-legitimise opponents of wind energy but we should not study whether opponents are NIMBYs (Burningham 2000, Wolsink 2006). We agree that it is important to study the discursive use of ‘NIMBY’ in wind energy politics (Haggett and Toke 2006) but we still believe it matters whether some people oppose local wind energy developments for self-interested reasons but are willing to support developments elsewhere that might affect other people in the same way. The self-interested NIMBY is probably relatively rare but the evidence is less conclusive than much of the literature suggests because most studies have not been designed to distinguish NIMBYs from place-protectors or qualified supporters. Moreover, For example, small-n qualitative studies based on interviews with protagonists in wind energy disputes (e.g., Waldo 2012) cannot conclusively show that NIMBYs do not exist because they may simply be missing from the small sample.

Furthermore, studies which examine people’s concerns about wind farms often argue that their data shows opposition is based on landscape effects (Jessup 2010) or concerns about procedural or distributive fairness (Gross 2007) rather than self-interested reasons. However, while this suggests that the number of NIMBYs is small, it does not show that there are no NIMBYs. In contrast, some studies do identify what appear to be concerns connected to economic self-interest, such as the negative effects of wind farms on house prices (Barry *et al* 2008; Jones and Eiser 2009, Upham 2009). However, these studies do not show that the respondents are NIMBYs. If, for example, a respondent believes that wind energy developments should go ahead only if they do not have a significant negative effect on the price of *either* the respondent’s house or anyone else’s house, they are a qualified supporter of wind energy not a NIMBY. The NIMBY is a self-interested free-rider who is not concerned about the negative effects of wind energy developments on other people.

To summarise, there is no conclusive evidence in the literature that there are people who hold the combination of attitudes that are associated with NIMBYism. However, this may be due to the absence of research that could demonstrate the existence of NIMBYs. We only know that if there are any NIMBYs they are likely to be a small proportion of the population nationally.

The second provisional conclusion that we draw from the recent literature is that concerns about the landscape effects of developments are most common among and often most important for opponents of wind farms (Smith and Klick 2007, Jones and Eiser 2010, Jessup 2010). However, we do not know whether those who express landscape concerns are qualified supporters or place-protectors. Some discussions assume that those who express landscape concerns are qualified supporters (e.g., Hindmarsh and Matthews 2008) while others regard them as place-protectors (Devine-Wright 2009, McLachlan 2009, 2010). We could only separate the two attitude types by looking in more detail at how they express their concerns about landscape/place and by examining their attitudes to local and non-local proposed developments. For example, if someone identifies generic features of landscapes that make them unsuitable for wind farms in both local and non-local places, it would seem appropriate to classify them as a qualified supporter. In contrast, if someone appeals to the specialness of their local place and makes different judgements about proposed local and non-local developments, which (might generally be agreed to) have similar features, it may be appropriate to classify them as a place-protector.

Our third provisional conclusion is that concerns about fairness are also very common and often very important for qualified supporters of wind energy (Gross 2007, Haggett 2008). Opponents of wind energy developments often highlight both the unfairness of the process of decision-making about developments and the unfairness of the distribution of benefits and burdens associated with developments (Gross 2007, Fisher and Brown 2009). Concerns about procedural fairness may be especially significant where a major energy company proposes a development and local people feel that they have not been consulted at an early stage about the proposed development or have not had an opportunity to influence the siting process (Agterbosch *et al.* 2009). However, recent research has also shown that concerns about procedural fairness can arise in community-led developments when some members of the community feel that they have been excluded from the decision-making process (**REF**).

Concerns about distributive fairness may be raised in relation to both burdens and benefits. First, the concentration of developments in particular geographical areas may raise concerns about whether the landscape and other costs associated with hosting wind energy developments are being distributed fairly between different communities (Haggett forthcoming). Second, the distribution of the benefits of wind energy developments may be considered unfair if local communities (or some members of local communities) receive little or no benefits while developers and energy companies make large profits, landowners are paid annual rents for the use of their land for siting wind turbines, and consumers elsewhere in the country use more energy than the communities hosting developments (Jobert *et al.* 2007).

Developers have increasingly acted to address the concerns of this type of qualified supporter by seeking to engage local communities earlier in the siting process and by offering ‘community benefits’ packages to local communities (Aitken 2010b; Cowell *et al* 2011). However, the existing research provides only a limited picture of the principles (and practices) of procedural and distributive fairness that qualified supporters are most likely to require developments to satisfy. So, there is more to learn about the relative frequency and importance

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of different types of fairness-related conditions that qualified supporters place on their support for wind energy developments.

In this section, we have proposed revisions to our typology of attitudes to wind energy and presented some provisional conclusions about the makeup of public opinion. We believe that the evidence suggests that there are large numbers of qualified supporters of wind energy (who are concerned especially about landscape and fairness), some place-protectors (but we do not know how many of those concerned about landscape/place are place-protectors and how many are qualified supporters), a small number of unqualified opponents (who indicate that they are ‘strongly opposed’ to wind energy in surveys), and there may be a small number of NIMBYs (but the evidence remains inconclusive).

5. Relations of power in the local politics of wind energy

In *SGI*, we offered an over-simplified account of the relations of power in the local politics of wind energy by considering only two alternatives: majority rule and minority rule. In this section, we propose a more sophisticated approach to the democratic deficit explanation, which uses a new institutionalist theoretical framework to analyse relations of power among members of the public with different attitude types and among other stakeholders, including developers, local authorities, environmental groups, local planning officers, planning inspectors and central government departments (Bruekers and Wolsink 2007). We outline four general conclusions that we believe are suggested by the recent literature.

First, local members of the public can and do block or delay wind energy developments. The power of local communities is widely acknowledged in the literature (e.g., Bruekers and Wolsink 2007, Eltham *et al.* 2008, Graham *et al.* 2009, Jones and Eiser 2009, 2010, Phadke 2011). For example, Righter (2002, p. 37) claims that ‘small numbers of dedicated opponents can and will attack projects, crushing developers with their passion’. Less dramatically, Swofford and Slattery (2010, p. 2517) assert that ‘the attitudes of those living in close proximity to a wind farm project have a strong effect on planning [applications]’. As Righter (2002) suggests, local opponents may not even need to be large in number. If they are well motivated, well-resourced and strategically astute, they may be able to influence local planning officers or local councillors so that a development is delayed or even blocked. In saying this, we are endorsing a revised version of the democratic deficit explanation that we offered in *SGI*. Our original version hypothesised that a minority group of *unconditional opponents* of wind energy might have the power to block developments. Our revised claim is that a minority group of local members of the public – which might be made up of unqualified opponents or qualified supporters (who do not believe this development meets the right conditions) or place-protectors or even NIMBYs or, most likely, will include people with different attitudes to wind energy – will often have the power to block developments.

However, the assumption that local opponents are able to block developments has been challenged in the UK (Aitken *et al.* 2008) and in several other countries, including Australia (Hindmarsh and Matthews 2008), Spain (Zografos and Martinez-Alier 2009) and Sweden (Waldo 2012). In the UK context, Aitken has argued that local campaigns may delay wind farm projects by persuading local councils to refuse planning permission but they do not block them because developers invariably challenge the local decision and planning permission is usually granted after a public inquiry (Aitken *et al.* 2008, Aitken 2009, 2010c). Warren and Birnie (2009, p.107) suggest that Aitken’s argument is ‘supported by the fact that over 90% of planning applications for onshore wind farms [in Scotland] are approved’.³

It may be that Aitken’s assessment of the limited power of local opponents is correct in Scotland (where the data suggests that there is not a significant gap between public opinion and success for wind energy developments in the planning process). However, as we saw earlier, the success rate of developers in planning decisions has been lower in the UK as a whole (Table 2). Moreover, data collected by van der Horst and Toke (2010, p. 215) on wind energy planning applications in England between 1991 and 2006 suggests that out of the 37 applications rejected by local authorities only 8 had been approved on appeal.⁴ So, opponents do not appear to be powerless at the appeal stage. Moreover, there is significant evidence from case studies that successful campaigns against proposed developments are usually led by people living in close proximity to them (Swofford and Slattery 2010, Kaldellis *et al.* 2012).

Our second conclusion is that some local communities may be more likely to be successful in blocking developments than others. There is some evidence that wind energy developments are more likely to be rejected on appeal when they are proposed in communities where there is higher life expectancy, higher voter turnout in national elections, lower health deprivation, more people working in the private sector, and more second and holiday homes (van der Horst and Toke 2010). The suggestion here is that local opposition is more likely to be successful when it is better resourced – economically, legally, technically and in terms of social and political

³ Warren and Birnie are quoting data from Toke 2005.

⁴ They report that 2 further appeals were still outstanding at the time of data collection.

capital. More empirical studies would be required to confirm this conclusion but it seems consistent with new institutionalist analyses of the important role of a wide range of different types of resources in relations of power.

The third conclusion that we draw from the recent literature is that local opponents are not the only significant opponents of wind energy developments. Indeed, it may be that other stakeholders, in particular, nature or landscape conservation groups, may exercise as much or more power in the local politics of wind energy (ref). For example, Toke (2005a, p.1536) has argued that 'the Council for the Protection of Rural Wales (CPRW) has a policy of objecting to proposed wind farm schemes as a matter of standard policy'. Conservation groups have the necessary financial, legal and knowledge resources, and have well-rehearsed strategies for opposing wind energy developments (Haggett and Futak-Campbell 2011). Co-operation among different kinds of opponents of a particular wind energy development, which enables the pooling of resources and the use of mixed strategies that to influence decision-making through various channels, may be more likely to succeed. More detailed empirical studies of a large number of cases would be necessary to confirm this conclusion but it is consistent with new institutionalist analyses of the importance of network resources in relations of power.

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Our fourth conclusion is that the relations of power in the local politics of wind energy are significantly altered when there is active local support for a 'community' wind energy scheme (Barry and Chapman 2009, Rogers et al. 2008). A common argument is that the amount of installed wind energy capacity in the UK would be increased by encouraging small scale, community-led developments (Warren and Birnie 2009, Warren and McFayden 2010). This argument is often supported by appealing to the experience of other countries, such as Denmark (Toke 2005b, Toke et al 2008). However, more recent research in the UK has problematised the notion of 'community' wind energy (Walker and Devine-Wright 2008). Community wind schemes will not always enjoy unanimous – or even majority – support in the local community (ref). Instead, community schemes may be developed by small groups of local activists, sometimes in collaboration with local authorities or larger wind energy developers (ref is this right?). As a result, 'community'-led schemes may be as controversial in the local community as developments proposed by multinational energy companies (**REF**). More research would be required to properly understand how different features of different kinds of 'community'-led schemes affect the relations of power in the local politics of wind energy but we can be confident that the involvement of local pro-wind activists will often have an impact – even if it remains an open question whether 'community'-led schemes are an effective way of increasing installed wind energy capacity in the UK.

In this section, we have presented four conclusions about the relations of power in the local politics of wind energy in the UK, which have significantly refined our democratic deficit explanation. We believe that the institutional rules governing wind energy planning applications allow some well-resourced local opponents with strong commitments (supported by well-networked and well-resourced national interest groups) to effectively oppose developments. So, the opponents of any particular wind energy development may be a minority nationally and even locally but they might still be able to successfully block the development.

6. Conclusion

The aim in SG1 was to contest the suggestion that NIMBYism or self-interest was the only explanation for the gap between the high level of public support for wind energy in opinion surveys and the relatively low level of installed wind energy capacity in the UK. We proposed two alternative explanations: the majority of the public are qualified supporters and they determine the outcome of wind energy planning applications; or a minority of the public are unqualified opponents and they determine the outcome of wind energy planning applications. In this article, we have re-asserted our belief that the social gap is politically significant and we have provided more data to support its existence and clarify its size. More importantly, we have acknowledged that our original explanatory framework was too simple to capture the range of possible explanations of the social gap.

We have re-interpreted the three explanations that we previously offered in a new theoretical framework, which distinguishes two questions: What is the makeup of public opinion on wind energy? What are the relations of power in the local politics of wind energy? We believe that any explanation of the social gap should provide answers to both questions. The answer it offers to the first question should provide a critical perspective on the results of standard public opinion surveys that show 80% of the public in the UK support wind energy. The answer it offers to the second question should provide a better understanding of who blocks wind energy developments and under what conditions they are able to do so. Together, these two answers should explain the social gap.

~~In this revised article, Our review of the recent literature suggests some provisional conclusions but although we still do not claim to have offered a definitive explanation of the social gap, we believe that it the social gap is most likely to be a consequence of two factors. First, the evidence suggests that there are large numbers of qualified supporters and (some) place protectors as well as a few unqualified opponents and, perhaps, some self-interested NIMBYs, who may all work together to oppose particular wind energy~~

developments. So, it seems likely to be a mistake to try to explain the social gap by reference to the actions (or power) of people with any single attitude type (as we did in *SGI* with each of our three explanations). Second, the institutional rules governing wind energy planning applications allow some well-resourced local opponents with strong commitments, supported by well-networked and well-resourced national interest groups, to effectively oppose developments. So, the opponents of any particular wind energy development may be a minority nationally and even locally but they might still be able to successfully block that development.

Finally, we want to suggest two areas for further research that might 'deepen' our understanding of the causes of the social gap, while also providing policy-makers with more useful guidance on how the gap might be closed and the level of installed wind energy increased. First, if many people are qualified supporters and most qualified supporters are concerned about landscape and fairness, the key to understanding, and potentially reducing, the social gap may lie in developing a better account of the detailed character of these concerns and the relations between them. For example, how do people value landscapes or places and in what ways do wind energy developments pose a threat to the value of landscapes or places? Similarly, what conceptions of procedural and distributive fairness tend to inform people's concerns about wind energy developments and what is required to avoid (perceived) unfairness? And, how are different landscape/place-based concerns related to different fairness concerns? If we can answer these questions, we might better understand (in psychological terms) the causes of the social gap. Moreover, it might be clearer how policy-makers and developers could choose potential development sites and design development processes that would be less likely to be opposed by a significant number of qualified supporters. Second, we might seek to better understand the conditions that make effective co-operation among opponents possible. For example, is effective opposition dependent on local opponents having the resources that come with living in a relatively affluent community? In what circumstances can developers prevent effective opposition by offering a community benefits package? If we can answer questions of this type, we might better understand (in new institutionalist terms) the causes of the social gap. Moreover, it might be clearer what policy-makers and developers could do to reduce the social gap by accommodating or avoiding [opposition](#).

Comment [T3]: Derek, do you want to add a note on the wider significance of the social gap for (1) other renewable energy issues and (2) majoritarian democracy?

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Table 1. National opinion surveys on wind energy (2003-2011)

Date	Survey	No. of people surveyed	Question	Answer format	Results
2003	TNS for DTI	1279	What is your opinion of using onshore wind to generate electricity? What is your opinion of using offshore wind to generate electricity?	Five options: 'a very good idea', 'a fairly good idea', 'neither a good idea nor a bad idea', 'a fairly bad idea' or 'a very bad idea'.	Onshore: 49% a very good idea 86% good idea (fairly or very) Offshore: 51% a very good idea 84% good idea (fairly or very)
2006	Poortinga <i>et al.</i>	1491	How favourable or unfavourable are your overall opinions or impressions of the following energy sources for producing electricity currently..? Wind Energy.	Five options: 'Very favourable', 'Mainly favourable', 'Neither favourable nor unfavourable', 'Mainly unfavourable' or 'Very unfavourable'.	50% very favourable 81% favourable (mainly or very)
2006	DTI	2032	I am now going to read out a list of statements about renewable energy, and I would like you to tell me how much you agree or disagree with each one. I am in favour of the use of wind power.	Five options: 'Disagree strongly', 'Disagree slightly', 'Neither agree nor disagree', 'Agree slightly', or 'Agree strongly'.	54% agree strongly 81% agree (slightly or strongly)
2006	Eurobarometer 65.3	1337	Are you in favour or opposed to the use of these different sources of energy in the UK? Wind Energy	Seven-point scale from 'strongly opposed' (1) to 'strongly in favour' (7)	44% strongly in favour (7) 78% in favour (5, 6 or 7) Average score 5.7
2007	BERR	1970	I am now going to read out a list of statements about renewable energy, and I would like you to tell me how much you agree or disagree with each one. I am in favour of the use of wind power.	Five options: 'Disagree strongly', 'Disagree slightly', 'Neither agree nor disagree', 'Agree slightly', or 'Agree strongly'.	54% agree strongly 82% agree (slightly or strongly)
2008	BERR	2047	I am now going to read out a list of statements about renewable energy, and I would like you to tell me how much you agree or disagree with each one. I am in favour of the use of wind power.	Five options: 'Disagree strongly', 'Disagree slightly', 'Neither agree nor disagree', 'Agree slightly', or 'Agree strongly'.	50% agree strongly 80% agree (slightly or strongly)

2011	Eurobarometer 75.1	1322	To what extent are you in favour of or opposed to the use of the following sources of energy in the UK? Wind Energy	Four options: 'Strongly in favour', 'Fairly in favour', 'Fairly opposed' and 'strongly opposed'	61% strongly in favour 91% in favour (fairly or strongly)
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Source: DTI 2003, Poortinga *et al* 2006, DTI 2006, Eurobarometer 65.3 2006, BERR 2007, BERR 2008, Eurobarometer 75.1 2011.

Table 2. Onshore wind farm developments in the UK (2004-2010)

	2004	2005	2006	2007	2008	2009	2010
Submitted	79 (2874.81 MW)	95 (2485.13 MW)	123 (2162.65 MW)	122 (1901.68 MW)	149 (2080.95 MW)	138 (3040.81 MW)	148 (2114.33 MW)
Approved	31 (635.13 MW)	40 (671.56 MW)	38 (876.55 MW)	63 (1141.47 MW)	72 (1766.43 MW)	98 (1322.57 MW)	83 (1351.14 MW)
Rejected	28 (279.65 MW)	29 (674.45 MW)	31 (668.90 MW)	48 (868.58 MW)	52 (1578.10 MW)	67 (759.95 MW)	84 (1245.03 MW)
Built	11 (181.14 MW)	22 (369.73 MW)	21 (531.50 MW)	28 (359.25 MW)	41 (557.45 MW)	39 (812.13 MW)	39 (539.35 MW)

Source: BWEA 2012