



Windfalls for whom? The evolving notion of ‘community’ in community benefit provisions from wind farms

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ABSTRACT

This paper investigates the increasing provision of ‘community benefits’ – i.e. financial or material benefits to communities affected by wind energy development – with a focus on on-shore wind projects in Wales. The paper argues that as community benefits are becoming more significant in scale, so pressures are mounting on what have hitherto been largely *ad hoc* arrangements for their disbursement. The paper finds that previously dominant definitions of communities as places directly affected by and within close proximity to wind farm development, are being challenged by the tendency to define ‘affected’ communities as broader entities characterised by more indirect and widely dispersed claims to benefit entitlement. This redefinition of the recipient community is causing conflict, much of it focused on debates about how community benefits should be governed. Evidence suggests that any re-scaling of relations around community benefits – from local compensation towards wider development goals – may be more consensually achieved in communities with previous experience in handling these funds, and where growing income streams allow multiple constituencies to be satisfied.

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1. Introduction

Around the world, efforts to promote constructive renewable energy transitions are increasingly emphasising the importance of collaboration with local communities (Lund, 2000; Devine-Wright, 2005; Hindmarsh and Matthews, 2008). This reflects the widespread belief that community outreach and involvement practices play a critical role in gaining the public trust essential to help make renewable energy developments socially acceptable and viable (Bolinger, 2005; Jobert et al., 2007; Evans et al., 2011).

This ties into the provision of ‘community benefits’ – some form of additional, positive provisions for the area and people affected by major development. The argument that constituencies harmed by development ought to receive some form of benefits is an enduring feature of facility siting debates (Gallagher et al., 2008). Community benefit provisions have become important in relation to renewable energy projects, especially wind farms, where they have acquired a role in mitigating social conflicts around the environmental impacts of these facilities (Wolsink, 2007; Zografos and Martinez-Alier, 2009).

Typically in the UK, such benefits have taken the form of community funds paid by developers to ‘the affected community’,

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although wider packages of in-kind benefits (such as educational programmes) have also become an established part of project development (CSE, 2007a). A major aspiration of wind energy companies and government, is that providing benefits to communities helps to generate local support and expedite planning consent (HM Government, 2009), although how far this is achieved is debateable (Cowell et al., 2011). One reason why this particular form of community benefits has become especially prominent in the UK, is that the great majority of wind energy development has been driven by major, commercial energy utilities with few other economic ties to development locations (Munday et al., 2011). This differs from the kind of local cooperative and farmer-owned wind farms which have been a more prominent feature of wind energy development in Denmark and Germany, and where project revenues are thus the mechanism by which benefits flow back to communities.

Although there has now been 20 years of experience with community benefits from wind energy in the UK, relatively little attention has been paid to understanding precisely who or what might constitute the ‘affected community’ entitled to receive these benefits, and what role they might play in negotiating and ultimately managing the scale and type of benefits provided. To date, a pragmatic approach to defining the ‘community’ has dominated policy and developer discussions around community benefits, centred on wind farm sites. Thus, for example, UK Department of Trade and Industry (DTI) research (2005) identifies the ‘community’ concerned as communities in areas close to, and affected by wind

turbines (in visual and noise terms), whilst acknowledging that the spatial extent of such localities has no clear boundary (see also CSE, 2007b). This approach to defining the ‘community’ to which benefits might be distributed reflects the *ad hoc* approach which has tended to characterise discussions around the nature and size of community benefits themselves. The first significant commercial wind farms were commissioned in the UK at the start of the 1990s, and for most of the next 15 years ‘community benefits’ were treated on a case by case basis. There was little systematic investigation of the benefits provided or of the uses to which these benefits are put (DTI, 2005).

This situation has been changing rapidly. Across the UK, there has been an increase in the scale of wind energy development and, with that, an increase in the level of benefits being channelled to the surrounding communities. Most wind farm developers are providing benefits systematically and routinely (Cass et al., 2010; Cowell et al., 2011). Furthermore, policy-makers are increasingly seeking to steer and improve the process of extracting, negotiating and delivering community benefits. This reflects a desire to establish the legitimacy and transparency of their provision and, to some extent, promote the practice. Thus, a range of protocols to guide benefit discussions have been produced (see, for example, CSE et al., 2007b); community benefits have been supported in planning guidance (for example, Welsh Assembly Government, 2005); and proposals have been made for registers detailing the community benefits agreed with developers (Scottish Government, 2010).

These trends beg a number of questions. The first set of questions surround whether the increasing scale of community benefits, and efforts to govern the process through various policy interventions, are challenging the definition of the community deemed to be affected by the wind farm development and exercising some claim on benefits provided. A second set of questions concern the impact of the enhanced provision of community benefits on how they are managed and governed. These are important questions given the likely increase in community benefit provision (Munday et al., 2011), and concomitant desire to harness them for wider development purposes. The purpose of this paper is to explore these questions drawing on evidence from a study of community benefit provision in Wales. The paper argues that the growing scale of community benefit provision is creating enhanced scope for conflict around both the governance of benefits and how to define the recipient community. The paper finds that dominant definitions of communities as largely pragmatic entities directly affected by and within close proximity to wind farm developments, are being challenged by the tendency to define ‘affected’ communities as broader entities characterised by more indirect and widely dispersed claims to benefit entitlement.

In the next section, we discuss the conception of community and its specific manifestation in the context of community benefits around wind farms. This focuses attention on the inherently contested nature of the concept of community and the need to understand precisely who makes claims for community benefits and on what grounds. We then present empirical evidence on the definition and role of the ‘community’ in community benefit discussions and management, drawing on a study of wind farms in Wales. In the concluding section we summarise our findings.

2. Conceptualising the ‘community’ in community benefits

We begin our analysis by unpacking the conception of ‘community’ being attached to wind farm development and community benefit debates. Our argument is that whilst a malleable notion of ‘community’ creates a flexible ‘space’ within which different interests and groups can be accommodated, the consequences for

both the mediation and disbursement of community benefits are likely to be highly contingent upon precisely who makes the claims over this space, how claims are asserted and whose claims prevail. The material nature of wind farms – as tall, visible structures, often in rural locations that may be valued for a range of reasons – gives them a potentially wide range of neighbours and a distinctive constellation of affected parties. Nevertheless, older yet enduring debates on the nature and role of ‘community’ in local development and governance remain relevant.

A key theme in these debates concerns the difficulty of assuming that the discourse of ‘community’ used in development debates corresponds neatly with territory as an unproblematic and homogeneous ‘community of place’. Indeed, it has long been established that communities of place are far from homogeneous and include multiple and diverse ‘communities of interest’ (Bell and Newby, 1971; Shucksmith, 2010). These communities of interest are not necessarily cohesive or unproblematic coalitions, and do not automatically exhibit strong mutual ties, obligations and trust relationships. Goodwin (1998) asserts that communities are often transient and dynamic products of struggle and contestation between those included and those excluded. ‘Community’ can sometimes be constructed in relation to external developmental threats, like a wind farm, rather than existing *a priori* (Dalby and Mackenzie, 1997). Similarly, in a study of community-based forestry, Hughes McDermott (2009) draws attention to how differential interests and powers within communities shape the distribution of benefits from community-owned natural resource management. Empirical evidence on social attitudes to renewable energy and community benefits has encountered community members saying that ‘community’ benefits themselves may be divisive (Cass et al., 2010). Thus, there are clear dangers in seeing the ‘community’ as a romanticised and quiescent phenomenon characterised by consensus, shared interests and collaborative strategies (DeFillipis et al., 2006).

Although developers and policy-makers might find it convenient for there to be clear, extant communities ‘out there’ ready to be the recipients of community benefits, any assumption that such communities exist is problematic. Furthermore, when it comes to working out who would make best use of community benefits, the literature asserts that communities are highly unequal in their capacities to accomplish governance and development goals. The growing interest in active citizenry and community governance characteristic of successive UK governments since 1997 is based on the underlying assumptions that communities have a ‘sense of place’, easily build and sustain social capital and can plan, deliver and coordinate better than governments or markets (Adams and Hess, 2001; Featherstone et al., 2012).

However, the ability of actors to mobilise themselves collectively or ‘organise from below’ into community-based governance systems of participation and control is highly differentiated and locally contingent (Clark et al., 2007). Community governance, like any other form of governance or regime, will comprise members with various institutional bases with particular domains of power and particular social constituencies. As such it involves diverse social groupings coming together to gain a capacity to act (Goodwin, 1998). Thus not all communities will have equivalent ability or resources to take on governance or development responsibilities and act effectively (Murdoch and Abram, 1994; DeFillipis et al., 2006). Communities have very different levels of both intellectual and knowledge resources, as well as broader relational resources, or the trust and social understandings which are built up through their interactions with other actors, institutions and initiatives (Shucksmith, 2010). This creates a series of dilemmas for community governance as far as state action is concerned. On the one hand states may be unwilling to allow, ‘citizens and communities

... to 'go their own way' (Murdoch and Abram, 1994, p. 49), to pursue activities which deviate significantly from the wider public, strategic or national interest. On the other, co-ordinating community actions is not an easy task as 'some community organisations contest, mobilise and politicise while others... are well adapted to provide services and adjust to the socio-political relations of the neoliberal context' (DeFillipis et al., 2006, p. 680).

This complex, contested nature of community has rarely been fully recognised by key actors within the electricity supply industry. Indeed, dominant policy perspectives on sustainable energy transition have been criticised for placing central emphasis on defining and realising the 'technological potential' for renewable energy – defined using relatively aspatial economic and engineering knowledges – and relegating the messy social worlds of implementation to a downstream, malleable problem (after Shove, 1998). This hierarchical, technocratic perspective has been met by a growing array of social research highlighting the diversity of social responses to renewable energy, and the way in which such responses can be mediated by notions of rurality and place (see for example Moragues-Faus and Ortiz-Miranda, 2010; Woods, 2003). Within this literature, however, relatively little attention has been given to the ways in which energy developers – as carriers of potential investment – seek to foster support for their projects within the locale of a proposed development, and local responses to those strategies (Devine-Wright, 2012; see also Cass et al., 2010; Cowell et al., 2011).

For all these reasons perhaps, discussions around community benefits from wind farms have typically defined 'the community' rather loosely. UK government research (DTI, 2005) identified the 'community' in relation to benefits from wind farms as communities of place, or in their terms, 'communities of locality' – areas close to, and affected by, the turbines – rather than 'communities of interest' or groups of people with a common interest but who may not be local to each other. This creates a degree of ambiguity as to whether the community concerned should constitute those individuals located within a geographical community and directly impacted by the development – which may be few in number – or a much broader aggregate such as all the individuals living near a wind farm or some organised entity which delivers collectively agreed goals. If 'impact' helps to define the relevant moral community, then there is the further question of which impacts should count: only those for farmers whose land is physically affected by the turbines and ancillary equipment, or those affecting any residents who believe that their views are impaired by the development, be they close by or more distant?

Guidance documents and protocols developed to assist the negotiation of community benefits have adopted a similarly open-ended perspective on how to define the beneficiary 'community'. For example, a protocol developed for north-east England defined the community as those most affected by the presence of the wind farm, based substantially on proximity but recognising other relationships to the development (Community Viewfinders, 2007). The Department of Trade and Industry (DTI) toolkit (CSE et al., 2007b) acknowledges that certain 'communities of interest' (such as the recreational users of affected landscapes) might be legitimate beneficiaries, alongside 'immediate' and 'host' communities. However, it also argues that much depends on local networks and identities as well as debates about the 'ownership' of local environmental resources affected by wind energy.

Conceptions of community can also vary with the nature of the benefit under discussion – with people accepting that 'local' employment benefits from component manufacturing may accrue to factories in the wider region, whereas benefit funds should be directed to communities close to the wind farm site (CSE et al., 2007). In this regard, the DTI toolkit suggests that local authorities consider the merits of running a pooled community benefit fund. The

policy of Argyll and Bute Council, Scotland, is held up as an example, which recommends splitting funds with 60% going to trust funds in the immediate local community and 40% to the wider community through the Argyll, Lomond and Islands Energy Agency (Alienergy) (Argyll and Bute Council, 2005). Beyond this, most protocols are relatively quiet about the allocation of benefits to communities beyond (or within) the residents of the most directly affected areas.

This flexible definition of 'community' finds resonance in other studies looking at the role and meaning of community in community-based renewable energy projects. Walker et al. (2007) have found that in such projects the community is defined in divergent ways with research respondents making frequent reference to there being no set definition of community and emphasising the need to be flexible rather than strict and judgemental. Other studies suggest that different conceptions of 'community' may be invoked depending on the different dimensions of wind farm developments being emphasised or prioritised i.e. whether process or outcome concerns (Walker and Devine-Wright, 2008). The process dimension of a development is concerned with who a project is developed and run by, and who is involved and has influence. The outcome dimension is instead 'concerned with how the outcomes of a project are spatially and socially distributed – in other words, who the project is for, who it is that benefits particularly in economic or social terms' (Walker and Devine-Wright, 2008, p. 498). In the UK, community benefits generally imply a focus on the distributive outcomes of wind farm developments, but may also be inherently related to the process dimension inasmuch as inclusive development processes may be critical to realising meaningful local support and public trust in development projects. There may also be a process dimension to ensuring an equitable and agreed distribution of community benefits.

Walker et al. (2007) suggest that the rather malleable notion of 'community' which has emerged around community renewable energy developments is of functional and practical value, by enabling the narratives and practices of multiple actors to form a coalition around perceived shared interests which in turn provides common framings of policy problems. Critical to this coalition 'is that 'real' agreement on meaningful objectives and, in particular, deeper values is not implied or required, but that such differences are contingently held in place around a set of narratives or story lines' (Walker et al., 2007, p. 74; after Hajer, 1995). Thus a similarly loose definition of 'community' in discussions around community benefits from wind farms may have had advantages in allowing for innovation, and creating the discursive space around which divergent interests such as developers, governments, residents and others can be accommodated.

However, Walker et al. (2007) also assert that this malleability can become problematic when 'community' becomes politicised – as might be expected with the growing scale of community benefit flows from wind farms, and concomitant efforts to formalise provisions and harness them to wider purposes. This is because it cannot be presumed that any notion of 'community' in community benefits necessarily embodies a clear and uncontentious form of collective communitarian ethos or principle (Walker et al., 2010), as discussed above. Where debates move from generalised notions of benefits to consideration of the particular institutional and allocative arrangements that will be applied, the broad discourse coalition surrounding community benefits may break down. This also applies to different models of ownership, which vary in their inclusiveness. Investment through share ownership, for example, may bring benefits only to those willing and able to invest, whereas community trusts or charities may to varying degrees act in the collective interest of everyone in a geographically defined area (Walker, 2008).

These insights challenge the notion that community benefits will always be easily and unproblematically agreed upon,

negotiated and disbursed in line with some unified collective will. This focuses attention on what Brown, 2007, p. 508) refers to as 'the messier, everyday underbelly of collective property in which the micro-resolution of rights within the bounds of collective entitlement are struggled over.' The nature of the outcomes for the coalition will thus critically depend upon the nature and quality of the relationships between people and organisations within a 'community' (and how and by whom this is defined). It will also depend upon who makes claims over community rights such as benefit provisions, how they are asserted and how divergent interests can be made to work collectively and effectively (Mitchell, 2003).

Of course, such claims-making activities are not automatically confined to members of some taken-for-granted, place-based community but are entangled with claims that arise from wider social constituencies. As noted in the introduction, there is emerging evidence that the up-scaling of on-shore wind energy development and, with that, the growing scale of community benefits are together disrupting the localised, pragmatic conceptions of community through which benefit provisions have previously emerged. Various bodies, such as local government, may feel that channelling all of these growing benefit flows through small communities of place, with their highly varying goals and capacities, may not address other important needs in the wider area. An 'impact compensation' rationale may thus shift towards a more redistributive agenda, especially in the wider climate of public budget cuts. One might expect to observe parallels between increasingly large on-shore wind energy facilities and off-shore wind energy. The latter facilities tend to be much larger but also more physically (if not psychologically) remote from human settlements, a tendency which has prompted some developers to approach the disbursement of community benefits through key stakeholders in the region, rather than engage in broadly-based discussions with affected publics (Devine-Wright, 2010). Implicit therefore in many steps to formalise arrangements for community benefits from wind are assertions of the moral relevance of wider constituencies and, frequently, different conceptions of the governance procedure for managing and disbursing benefits. It is to whether and how more formalised arrangements for community benefit provision might challenge the existing notions of community in practice that this paper now turns.

3. Evidence from Wales

3.1. The evolution and formalisation of community benefit provision

Whilst there is an emerging evidence base on community benefits and wind farms in the UK, much of it is based on relatively small samples (for example DTI, 2005), or focuses on 'community-owned' renewables, rather than community benefits that flow from the commercial wind sector. To redress this, a key element of the research on which this paper is based was to gather information on community benefits from every major wind farm in Wales in operation or under construction by the end of 2010 (see Appendix A). We chose to focus on Wales since it is reasonably representative of the rest of the UK in terms of the scale and nature of community benefit provision, and in terms of the scale and ownership patterns of wind farm developments. The public policy context for community benefits in Wales has also been similar to that of the UK as a whole, until 2010 at least; there is likely to be some divergence thereafter, as discussed further on. The baseline list of wind farms in Wales was compiled from the Renewables UK database (from which we adopted their definition of 'major' wind farms). This yielded a database of 28 operating wind farms and two under construction. While it might be argued that the sample is biased towards successful applications, there is little evidence that the provision (or non-provision) of community benefits has exerted significant influence on planning outcomes (Cowell

et al., 2011). The majority of the data was gathered from 2007 to 2008, but additional evidence has been gathered to update the picture until December 2011.

For each of these 30 wind farms, data was sought on the scale, form and rationale for the community benefits provided. Information was taken from planning process documents (environmental statements, reports from planning committees and inquiry inspectors), analysis of developer websites, supplemented by a survey with developers administered by telephone. The research also employed a series of semi-structured interviews with government officials, the wind energy industry, planning officers and other parties, chosen for their capacity to offer informed commentary on issues surrounding community benefits in Wales, and on the broader policy context.

In addition, we undertook in-depth case studies of the level and nature of community benefits in three wind farm projects namely:

- Bro Dyfi Community Renewables Ltd. (a community-led and owned project, involving two small, single turbines, yielding dividends to local shareholders and resources for a Community Energy Fund);
- the Carno wind farms (a site covering two commercially led, medium-sized developments, the first stages – 30 MW – offering a community fund and habitat management scheme, followed by an extension – 15 MW – with additional community benefit provision);
- Cefn Croes (at 58 MW, a large and locally controversial wind farm proposal with a sizeable annual contribution to habitat management and community benefit funds).

The case study analysis was intended to better understand the process through which community benefits were determined and governed. The three cases were chosen on the basis that they provided a representative sub-sample of different on-shore wind farm developments in Wales by size and scale of project and benefit provision, by developer, and by community involvement and opposition. Each case study involved analysis of the full planning file and a series of semi-structured interviews with the developer or operator, the local planning authority, a representative of the local community or community council, other intermediary bodies, and the landowner or farmer. A total of 18 interviews were conducted across the three case studies.

Table 1 shows that some form of community benefit provision has become an established feature of wind farm development in Wales. Typically this takes the form of a fund expressed in terms of £1000/MW/per annum of installed capacity, channelled to the area of the community council in which the wind farm has been located, in which a trust fund or similar body then disburses the money to local projects. It has also become more routine for developers to allocate funds towards measures promoting sustainable energy, as well as to provide habitat management plans for wind farm sites, incorporating elements of reparation and enhancement. This change over time is also shown by the way in which the first phases of a number of wind farms provided no community benefits, only to start providing benefit funds in subsequent phases. The sums involved have also gradually increased. Prior to 2002, a typical sum was £1000/MW/annum, whereas it has since become more common to see developers offering £2000, £3000 and £4000/MW/annum. While falling outwith this study, indicative community benefit contributions secured for wind farm projects on large Forestry Commission-owned sites are offering at least £2000/MW and up to £6000/MW (Cowell et al., 2012).¹ This pushes

¹ These schemes were all still in the planning process at the time of writing (April 2012).

Table 1
Community benefit provisions from Welsh wind farms, 1992–2010.

Category of community benefit	Frequency 1992–2001 (n = 15)	Frequency 2002–2010 (n = 20)
Community ownership (through some form of shares)	0	3
Community benefit fund (the provision of a sum of money by the developer):		
Number	7	14
Sums provided (£1000/MW/annum)	0.25–1.5	0.3–4.0
No. channelling funds towards sustainable energy purposes	1 of 7	7 of 14
In-kind benefits (the physical provision of an asset by the developer, e.g. interpretation boards, footpaths, parking facilities)	2	5
Environmental mitigation/enhancement	3	10
Windfarms where no community benefits were provided, or information not available	8	5

The numbers refer to number of windfarms providing each category of community benefit. For five windfarms the process of development has taken place in two distinctive phases which, for the purposes of the analysis above, have been treated as separate projects (hence 'n' totals 35, not 30). Where the same wind farm has been re-powered (i.e. smaller turbines replaced with larger, more powerful models), these have not been treated as a distinct phases.

the sums involved towards 5% of the typical profits (Cowell et al., 2007). Similar levels of community benefit (and increases) have been seen in England and Scotland (see for example DTI, 2005; Strachan and Jones, 2012).

At the start of the 1990s, community benefit provisions, where they existed at all, were somewhat *ad hoc*: 'the asset manager had his own little kitty of money, and every "Joe" approached them for bits and pieces' (Company 1 Interview). Over the next decade, community benefits became a broadly routinised, if still largely informal, component of wind development practice. In their planning applications, if developers even mentioned community benefits, it was usually only to outline the likely sum and the uses to which it might be put, with little or no justification evinced for making such provisions.

By the start of the 21st century, for several reasons, the provision of community benefits began to attract closer interest. From a government perspective, growing anxiety about delivering on targets for climate change and renewable energy fed through into a stronger desire to orchestrate quicker, more positive consent decisions for wind farms. Community benefits constituted one of a number of mechanisms which government believed 'had a role to play in building local support' for renewable energy projects (HM Government, 2009, para 6.9). Furthermore, it was felt that inconsistency of practice and the taint of 'bribery' and 'buying planning permission' needed to be dealt with (see, for example, Regen, 2004; Community Viewfinders, 2007; DTI, 2005). Thus, government energy departments and regional agencies produced a series of protocols and policies seeking to provide guidance on best practice procedures for discussing and delivering community benefits (e.g. Regen, 2004; BERR, 2008). In Wales, the Welsh Assembly Government (WAG) issued revised national planning policy guidelines which, *inter alia*, provided a detailed annex that sought to clarify the legitimacy of community benefits and, to some extent, to promote them by providing 'good practice' examples of the forms such benefits might take (Welsh Assembly Government, 2005). If national interventions tend to be light on prescription, individual local authorities also started instituting policies giving indicative target levels for community benefits from wind farm developers, including Powys County Council in mid-Wales (Powys County Council, 2008; Cowell et al., 2011; but see also Argyll and Bute Council, 2005). This emergent policy interest has meant that community benefits became visible, more legitimate, and more formalised, but also very often the subject of more intense scrutiny and discussion than hitherto.

3.2. Conceptualising the community

The evidence from Wales indicates that in discussions concerning community benefits from wind farms, it is the developer that takes the prime, initial role in constructing the relevant community. This tends to be a community of place, rather narrowly

conceived as the geographical community (or communities) around the development site, and deemed to be directly affected by the development, mainly in terms of direct visual effects. Pragmatic institutional boundaries are widely used: thus in the vast majority of cases, eligibility to receive community benefits is usually restricted geographically to residents or groups within designated community council areas containing, or having close visibility of, the wind farm concerned. In the cases of Cefn Croes and Carno, funds are split between more than one community council area. Thus, in Cefn Croes, funds are divided between Pontarfynach and Blaenrheidol community council areas. In the case of the Carno development, funds are divided between the communities of Carno, Llanbrynmawr and Trefeglwys with the largest share being allocated to Carno on the basis that it is deemed to have closest proximity or exposure to the wind farm and its associated infrastructure, such as access tracks and power lines.

However, our three case studies also revealed some pressure to broaden the geographical spread of benefits, partly as a consequence of their rising value and significance.

In the inception of the Cefn Croes wind farm, the private developer indicated a desire to distribute benefits and develop explicit links with a 'wider constituency' of communities and socio-economic programmes in the county of Ceredigion, and thus beyond the immediate vicinity of the wind farm. However, the funds provided to date have been targeted on the two immediate community council areas affected by the development, with several applications for funding from outside the area having been turned down. This has caused its own problems. For those who were against the development in the community, this showed the benefits stream actually serving to 'reveal how the local community is disempowered', by operating as a means of 'divide and rule...[and] bringing key people in the local community on board' (interview, local campaign activist). An officer in Ceredigion County Council, who was involved in the planning stages also highlighted how tightly the local community was defined in this case and indicated that focusing on the immediate communities only, represented a missed opportunity to integrate the Cefn Croes Wind Farm Community Trust's activities with those programmes seeking to develop the wider community.

Similar resistance to re-scaling the reference area for community benefits has been articulated elsewhere. In the first draft of its Interim Development Control Guidance on wind farms, Powys County Council (2006) in mid-Wales indicated that the 'community' benefit from community benefit provisions should be defined more broadly to encompass communities affected beyond those directly hosting them. It also proposed the establishment of a Council-run 'Sustainable Communities Investment Fund' to distribute these benefits in line with a more strategic set of principles for community investment and capacity building across the county. This met with resistance from the communities around the Carno

wind farms who felt strongly that this might mean ‘local needs are more likely to be ignored’ (Interview, Community Council representative). This concern was echoed by the developer who suggested that ‘this would simply turn into a tax on wind farms with the monies swallowed up in the council’s budget with no obvious benefits to local communities’ (Interview, developer). Other wind energy companies also expressed opposition to Powys’s plans, principally because it challenged their belief that community benefits are bound up with the relationship between them, the wind farm they are developing and operating, and the local community. To Nuon Renewables:

‘This approach is divisive and will disenfranchise the community from the wind farm development process. The process removes the motivation and opportunity for developers and communities to work together to tailor innovative programmes for community funds and ... ownership’ (Consultation response letter to PCC, 31.03.06).

They did not see a legitimate role for other actors like local government or, by implication, the wider constituency of interests that they serve (see Cowell et al., 2011).

A balance between ‘local community first’ and ‘wider constituencies’ was more consensually achieved in the case of the Bro Dyfi Community Renewables (BDCR) co-operative, where people from the location are both owner and developer of two turbines. There had been a community-led drive to spread the community benefits to communities beyond the immediate vicinity of the development in the Dulas Valley. This reflects the emphasis within these benefit provisions on energy efficiency work and the commitment of the partner organisation, EcoDyfi, to promoting sustainability. Thus, for example, low income households beyond the Dulas Valley were provided with four low energy light bulbs each.

In general, we found that while wind farm developers may focus community engagement processes around the development site, they are open to suggestion as to the relevant community with which to discuss community benefits, and often willing to respond flexibly to the information they receive. But this desire for flexibility generates resistance to efforts to impose a wider scale of reference, as in Powys (Cowell et al., 2011). The exception was at Bro Dyfi Community Renewables (BDCR). Perhaps this project lacked the sense of imposition of major commercial schemes; instead, community members – as developers – were able to make their own judgements as to who to incorporate and how. Such a high degree of community ownership and control remains rare in the UK context.

3.3. Community involvement

The evidence from Wales also illuminates the degree to which communities have a clear voice in discussions around community benefits and suggests that the greater the community involvement in the development process (particularly as developer), the greater the scope for a more organised and cohesive community coalition in benefit discussions. It is far from clear, however, that the power of communities in British wind energy development has altered much since the 1990s. There is anecdotal evidence that communities have become more assertive in seeking benefits as the scale of wind farm projects has increased (DTI, 2005, p. 36), with expectations based on the perception that market support for renewable energy development has made the sector more profitable (Community Viewfinders, 2007). Such expectations may well have informed the actions of Powys County Council. Although for developers the provision of community benefits is very much bound up with the consents process for new projects, it is far from clear that the levels of community benefit being provided reflects the anticipated intensity of opposition. Indeed, post 2001 planning reforms have tended to insti-

tute a presumption in favour of consenting large-scale wind, diminishing the ultimate effectiveness of opposition (Aitken et al., 2008; Cowell et al., 2011). Land ownership would have given communities greater leverage over the development process, and the actions of the Forestry Commission in Wales (FCW) – as the state owner of many, sizeable wind energy sites – provide some interesting insights into the potential. FCW set up a preferred bidder programme to manage the release of these sites, for which part of the criteria was that developers should set out the community benefits and local economic impacts they could provide. The evidence suggests that this ‘lever’ did enable FCW to achieve a modest increase in the levels of community benefits offered by some developers, compared to the levels they had offered on other sites in the UK (Cowell et al., 2012).

In most contexts, however, developers remain the main drivers of the level of community benefits provided, as it is their conception of what constitutes adequate financial returns that influences the proportion of revenue that may be devoted to other stakeholders. Despite various efforts to guide and formalise the provision of community benefits from wind farms, developers cannot actually be compelled to provide community benefits in any direct, regulatory sense, except where they can be presented as material to making the project acceptable in planning terms (for example investing in the creation of wildlife habitats to repair or off-set losses caused by the development). Other parties – residents, land owners, community and town councils, community organisations and other expert bodies – have mainly been able to exert some influence on the form of community benefit provisions; and it is here wind companies are generally more willing – and often very keen – to be responsive to demands from communities. Evidence from Wales (and elsewhere) suggests developers can be responsive to requests to deliver up-front lump sums or in-kind provisions, where that is helpful. What they find more difficult – despite advice encouraging open, early discussions about their position on community benefits (Regen, 2004) – is to be very precise about the sums available until later in the development process, when costly items like grid connections have been firmed up.

In some cases, the prospect of some form of community benefits has been flagged up, in fairly open-ended terms, in pre-application public meetings and exhibitions. Most developers are happy to listen to local suggestions about the relevant stakeholders to negotiate with, definitions of what constitutes ‘the local community’, and ideas for possible ways of using community benefits. Indeed, the development and community relations officers working for companies would welcome assistance in addressing these questions, since they find understanding the community difficult to do, being transient external parties: ‘we can’t understand exactly the dynamics of the community unless we immerse someone in the community’ (Company Interview 2). Interviewees expressed a desire for local authorities to do more to facilitate discussions about community benefits, and broker relations with the most representative community groups. With major offshore wind projects, outwith this study, some developers have employed local people in intermediary roles, precisely to understand local concerns and exchange information about the project (Devine-Wright, 2012).

While operators are generally concerned that funds are properly spent, there is a widespread tendency to take a hands-off approach to the disbursement stage:

‘It’s really for the community to decide what the funds are spent on – our view is that we give the funds to the community and we say that they cannot be used for certain things, and then it’s up to them really’ (Operator Interview 1).

Although such an approach is usually well-received, and allows community benefit packages to be responsive to certain local demands, conflicts of interest do emerge. For example, during the

initial phase of the Cefn Croes development, the Community Councils took chief responsibility for identifying uses for the community benefit funds, with the pattern of grants awarded during 2006 pointing to an emphasis on the improvement of community infrastructure (such as maintaining community woodlands, and funding new equipment for sports clubs) and projects aimed at strengthening community social networks (such as supporting church events and local radio) (Ponterwyd Community Website, 2012). The focus on these types of projects within the small reference community created potential for serious conflicts of interest because selected trustees from the fund were from the same community councils in receipt of benefits. In this regard therefore the provision of community benefits highlights tensions between the merits of involvement and the ethics of selflessness and personal detachment in the allocation of resources that can arise in small communities.

In other cases, greater involvement of particular community members in the ownership and development of the wind farms has provided a positive platform for cohesive and satisfied communities. For example, the developer of the second phase of the Carno wind farm development was a company led by a partnership of local farmers, allowing it to be represented as a 'pioneering attempt for local control over development and benefits from this valuable wind resource'.² Indeed, the Carno developer when interviewed was keen to emphasise the local ownership of the development:

'we see part of the community benefits from wind farms as coming from the generation of local jobs and income – or keeping money in the Welsh economy rather than it leaking out through large developers and construction companies who are based outside of Wales' (Carno Developer Interview).

In developing the community benefits package, the principal concern of the Carno developer was to ensure adequate benefit for the local community directly affected by the wind farm, and to balance this with the desire to secure longer-term benefits for the community and to spread benefits more widely. Members of the community councils were also involved in these discussions and were very supportive of the process and eventual package agreed. There has indeed been little dissent or disquiet from the communities in respect of the developments themselves and the community benefits arrangements agreed, and no dissonance between the two community councils. This agreement and support appears to have been achieved because the communities concerned have been fully involved in the relevant discussions from the start, and because the benefits package being offered to them remains very generous from their perspective and acceptable in enabling them to meet their needs relatively easily and quickly and with minimum administration and bureaucracy. It is viewed as something of 'a safety net – a truly local resource' meaning it can be drawn upon for various different purposes relatively flexibly, which is seen as particularly valuable in the context of continuing local authority budget constraints. Furthermore, it is locally governed – the fund was described in terms of 'local people looking after local people' (Interview, Community Council representative). There is thus perceived to be limited scope for anyone to 'pull a fast one' with only genuine projects coming forward for funding (Interview, Community Council representative). This positive experience has also been helped by the fact that this was Carno's third wind farm and third set of community benefits such that there was already considerable experience and learning from previous funds. This learning, and the fact that the level of benefits flowing to the community had increased with successive wind farm developments, may together have cultivated the fairly relaxed attitude

towards benefits being spread across a wider area. This tendency for community bodies initially to be closely proprietary over community benefits, but then to become more content over time to allow them to be spent on a geographically expanded concept of community, has been observed in Argyll and Bute, Scotland, which also has a relatively long history of wind farm development and fund provision (Cowell et al., 2012).

With the Carno development, it is conceivable that the involvement of local hill farmers may also have helped cement local support for the benefit arrangements secured. Indeed, the study points to other instances where local publics have been content to see economic returns from wind farms to struggling local farmers as a sufficient concept of 'community' and 'community benefits'. This was the case with the first phase of Moel Maelegen, a farmer's cooperative scheme in north Wales. However, although subsequent proposals to expand the windfarm from three to eleven turbines made provision for benefits to flow to a wider community, through significant community funds and share-owning options, it attracted many more objections. This is partly because, as a larger scheme, it was viewed by some as purely profit-making rather than just supporting marginal local hill farmers.

Further evidence of ways in which community cohesion can be strengthened is provided by the Bro Dyfi development whereby members of the local community established a company – Bro Dyfi Community Renewables Limited (BDCR) – enabling it to own and manage the wind turbine project. The development model is that members of the local community own shares in the project. The net income of Bro Dyfi Community Renewables Limited is then shared out among the shareholders in dividend payments over the 15 year life span of the project. Part of the income is passed to a fund for energy-related projects which reduce carbon emissions in the Dulas and Dyfi Valley communities.

Although initiated by a core group of local green energy enthusiasts, a key issue has been how to reach the whole of the local community: 'we ... want to make sure that it's our own community benefiting from the wind's energy' (Chair of BDCR, quoted in CAT, 2006). Those involved speak of the importance of bringing together the 'green' community, many of which are English incomers, with the 'indigenous', often Welsh-speaking community (see also Ecodyfi, 2007, p. 5). With the share issue, the minimum investment was set low, at £100, to maximise the breadth of participation. Furthermore, while the legal maximum share was set at £20,000, oversubscription was dealt with by limiting stakes to £1000, also serving to keep participation as wide as possible. Ensuring that 'the local community' had the best chance to invest was achieved by two mechanisms: concentrating publicity within the local area, and prioritising the investment of members of the Dulas Valley Community Wind Partnership (to which full membership is open to those living or working in Glantwymyn, Corris or Machynlleth Community Council areas), then the Dyfi Valley, then mid-Wales, in the event of the offer being oversubscribed. As a consequence, of the 57 individual shareholders, all but one live in the Dulas or Dyfi Valleys.

The installation of a second, more powerful turbine raised those wider issues of how scaling-up could be reconciled with maintaining strong community credentials, as the need for more capital necessitated a wider geographical pool of potential investors. Information on the share issue was disseminated more widely this time, via the magazine of the nearby Centre for Alternative Technology (CAT), and *The Ethical Investor*, but again the minimum investment was kept low, ceilings were imposed, and the share issue gave priority to people from within the local area. The outcome is that about two thirds of the investment (funds and numbers of individuals) in BDCR's two projects come from the local postcode area, SY20, as do major institutional shareholders such as CAT. In addition, whilst networks of friends, family and colleagues

² Letter from Powys Energy Agency to Planning Officer, Powys County Council in support of project, October 2005.

connected to the core actors and sustainable development sector in the Dyfi Valley bulk large among investors, there are also investors among other sectors of society:

'Definitely, share ownership has helped to break down invisible boundaries between the incomers and the, if you like, indigenous community ... what we need is another couple of these projects to take that even further' (Interview, Community Council representative).

3.4. The mediation and disbursement of community benefits

The evidence from Wales strongly suggests that as the scale and significance of community benefit provisions is increasing, so the governance, mediation and disbursement of benefits is also becoming more complex and, in some cases, more contested. In most instances to date, community benefit funds are administered through some form of local institution, either an extant body (community council) or combination of bodies, or a trust set up specifically to manage the funds, as with the Cefn Croes Wind Farm Community Trust. One can see funds administered through local partnerships, parish and town councils, or special committees – often with the involvement of local authorities and representatives of the operator – and sometimes bridging several communities. However, practice varies: in some instances, perhaps in a desire to avoid legal complexities, funds are administered on a voluntary basis, often by groups applying direct to the operator, though this is now less common.

The evidence suggests a growing concern that the *ad hoc* formats routinely adopted for administering community benefit funds which emerged while wind farms and benefit streams were relatively small, may be less adequate for grasping the opportunities as wind farms and community benefit funds become much larger. For example in the case of the planned Pen y Cymoedd development near Neath – a 299 MW wind farm proposed for one of the Forestry Commission sites – community benefit payments could be as large as £1.5 m per annum (Turner, 2010). Across Wales as a whole, if all the major wind projects on forestry sites come to fruition, the sums could amount to more than £75 million over the next 25 years. The scale of funding has highlighted the developmental potential of this resource yet, as one interviewee put it, often with present arrangements 'there is no joined-up thinking' on the use to which community benefits may be put. Inevitably, the use made of community benefit funds depends on the style, imagination, skills and knowledge of community councils and local trusts and the people that comprise them. There are issues of capacity among community bodies, in terms of time, expertise (financial and technical) and bargaining skills – both in managing the funds, and in negotiating with what are often major, multinational developers when wind farms and proposals for community benefits first come forward. While the voluntary labour of community councils and committees may be perfectly effective in reacting to applications for use of community benefit funds, the more pro-active and strategic use of such funds, perhaps for greater sustainability purposes, raises rather different challenges. Small, highly localised bodies operating at community council scale may not, of themselves, be able to facilitate the delivery of large scale projects, or respond to the demands of diffuse communities of interest and anticipate the future generations of a locality.

As a result, there is some evidence of increased use being made of intermediary bodies, such as local partnerships, development trusts and energy or council agencies, both in negotiating with developers about community benefits, and in assisting – or assuming day-to-day responsibility for – administering community benefits. This takes place with compensatory environmental enhancement

measures: with the Carno extension, Powys County Council and the Countryside Council for Wales provide assistance and advice for the land management scheme that applies across the site. It is also increasingly the case with community benefit funds.

One can posit a number of advantages to the use of intermediary bodies. The individuals involved may have more knowledge and experience of renewable energy, including knowledge of practices elsewhere. They can apply this to negotiations with developers and to ideas about how the benefits could be spent. Powys County Council's proposals to establish itself as a key intermediary in the extraction and disbursement of community benefit funds have already been discussed above, but consultation responses to their proposals indicated that local authorities are not trusted by many communities and developers to spend money appropriately (see also Cowell et al., 2011). Non-governmental intermediary bodies can be seen as more independent, credible and efficient. This trusted status can also enable them to hold grants, or to broker the idea of spending resources across a wider spatial area. Furthermore, using intermediaries to administer the funds brings with it managerial expertise and scope for administrative efficiencies i.e. for more than one community benefit fund to be managed by the same body. Where they have additional experience in community development and fund-raising, they can also use the 'clean money' from community benefits to raise match funding.

A common example of the use of an intermediary body is where council-funded local energy agencies or similar bodies have been used for administering and disbursing funding for energy conservation and small-scale renewable energy projects. One such intermediary body is Windfall (the Mid Wales Community Energy Trust), a non-profit company. Windfall acts as a conduit for an element of the community benefit funds from the Carno wind farms, and has channelled them to energy efficiency and small-scale renewable energy development in the area. Another example concerns the community energy fund provided by the Bro Dyfi Community Renewables turbines, where responsibility for managing the fund was given to Ecodyfi – the Dyfi Eco Valley Partnership. Ecodyfi was established in 1998, with the aim of strengthening the local economy of the Dyfi Valley through the careful stewardship of local natural and cultural resources. Ecodyfi has the added advantage of operating within the wider vision for integrated and sustainable rural development provided by the Dyfi Valley UNESCO Biosphere Reserve.

Increasing the role of intermediary bodies in the negotiation and disbursement of community benefits raises a number of questions in Wales. For all that such bodies are seen as a way of resolving deficiencies in community-level capacities, such bodies are themselves patchy in their coverage: many council-funded local energy agencies that could have provided advice and assistance folded during the first years of the 21st century, due to the withdrawal of funds (Interview, Planning Officer 1), and Wales has lacked a coordinated, cross-territorial source of advice and support for communities facing wind energy applications and thinking about community benefits. Secondly, increasing the role of intermediary bodies brings with it issues of management costs. Few community benefit funds make any explicit provision for staff time – the assumption is that tasks are conducted voluntarily. Indeed, part of the mistrust expressed towards local authorities taking on an intermediary role is suspicion about funds being 'swallowed up' in administration (see Cowell et al., 2011).

These issues of capacity are evident across the UK but in Scotland, a number of initiatives have been developed to address the problem, and help align local actions on community benefits to broader goals. The case of Argyll and Bute has been discussed above; not only has the Council introduced policies on the expected levels of community benefits, and used the ALLenergy as an intermediary to channel a proportion of funds to renewable

energy projects, but has set up the Argyll and Bute Windfarm trust to act as an 'umbrella' for the sharing and scrutiny out of community benefits to local communities whilst offering governance and legal support to local trusts (Interview, Council Officer). In 2001 Highland Council established the Highland and Islands Community Energy Company (HICEC) to support communities to development sustainable energy projects. In 2008 the organisation became an independent entity with a national remit – Community Energy Scotland – further demonstrating the growing formalisation of community benefit arrangements. Within its remit Community Energy Scotland offers to help communities in 'dealing with developers', and 'secure the most appropriate benefits for your community' (Community Energy Scotland, 2012).

Very belatedly, comparable action is now taking place in Wales. In 2010 the Welsh Government set up a new scheme ('Ynni'r Fro') to support social enterprises in installing their own renewable energy generation, using its other main lever – money from the EU European Regional Development Fund (Energy Saving Trust, 2010). The community energy and environment sector set up a new organisation, Community Energy Wales, in 2012, to provide practical support and advice to communities to develop sustainable energy projects (Community Energy Wales, 2012). Given the scale of community benefit funds attached to wind farms in the planning system in Wales, it is conceivable that CEW will be asked to assist communities in how these benefit funds might be deployed to renewable energy generation and energy efficiency schemes.

4. Conclusions

This analysis of wind farms in Wales demonstrates the increasing expectation by developers, communities and government that community benefits will be provided. Indeed, across the UK, national and local governments have become increasingly active in promoting and legitimising community benefits, with a number of implications. An array of interventions, from revised planning guidance to the supportive efforts of intermediary bodies, has co-evolved with the growing routinisation and scale of community benefit provisions. This, in turn, has helped formalise community benefits and bring discussion of their scale, scope and role much more 'out in the open'.

One combined effect of growing scale, formalisation and more detailed governance practices has been to challenge the rather narrow, pragmatic notion of community that has typically characterised such practices through the 1990s and early years of the 21st century. In the majority of schemes, the nature and scale of the 'community' has been determined pragmatically by the developer and is a community of place, with benefits to date being principally channelled to those deemed to be closest to, and most directly affected by development sites. However, across Wales there is evident pressure to broaden the geographical spread of benefits beyond a physically proximate community of place to geographically wider, more ambiguous community of affected constituencies, embracing both communities of place and interest. One dimension of these changing entitlements is to embrace the more indirect and moral impacts of large, visible wind turbines on the wider constellation of actors dependent on the landscape, tourism potential and quality of the rural environment. A second dimension is to supplement the 'impact compensation' rationale for community benefits with rationales based on the 'developmental potential' of these resources. Such pressures for change tend to emanate from either organisations with particular rationales (e.g. for sustainable development) or local authorities (with their broader social and political constituencies), both of whose claims on community benefit resources are growing in line with the

expanding pot of funds available. Most developers still appear to prefer to retain the flexibility to channel benefits to proximate localities, by way of shoring up their relationship with a particular community. Others have been content for benefits to be allocated in different ways, to serve organisations and interests that operate at wider scale. Indeed, one can point to several moves that serve to cement this more strategic focus for community benefits: moves by the Coalition government in England and Wales to allow local authorities to retain more of the business rates from wind energy development (Conservative Party, 2010); the creation of a Coastal Communities Fund from a proportion of the royalties flowing to the state from off-shore wind farms; and Scottish and Southern Energy (2011) upping their standard community benefit 'rate' to £5000 MW/annum but directing half of this into a Scotland Sustainable Energy Fund to support *inter alia* community energy schemes in the wider region.

Thus, as community benefit funds expand in size and scale, the 'community' and its spatial scale is increasingly broadening in scope whilst being constructed in more contingent ways. The notion of community, like that of scale itself, is therefore being shaped by inherent power relations or who is making claims for the affected 'community' and for what purpose (as per Herod, 2011). An inevitable result is increasing scope for conflict around who constitutes the community in community benefit discussions, and a range of related governance and intervention dilemmas. To date, community benefits have typically been administered by extant community institutions (such as community councils) or bespoke local trusts, with the diversity of arrangements largely reflecting the widespread desire on the part of developers and the communities around the wind farms they develop, for arrangements to be flexible and ostensibly locally (self) organised. The evidence here however points towards growing complexity in the governance, mediation and disbursement of community benefits, as the growing scale of on-shore wind farms and benefit funds makes limitations in community-level governance more apparent. These questions of capacity are often entangled with issues of geographical scale or hierarchies of social need; a connection captured by issues of whether the disbursement of benefits should respond to the requests of the affected community, or be aligned with strategic conceptions of sustainability and rural development. However, evidence suggests that any re-scaling of relations around community benefits – from local compensation towards wider development goals – may be more consensually achieved in communities with previous experience in handling these funds, and where growing income streams allow multiple constituencies to be satisfied. Our data from Carno in mid-Wales echoes similar experiences in Argyll and Bute, Scotland.

In this regard whatever the relative novelty of wind farm developments, mediating social relations around projects raises very similar issues to those in broader community development literatures. As long as communities are unequal in their capacities and resources and the local or national state has to contend with wider notions of public or strategic interest, communities are unlikely to be permitted to go their own way. The increasing formalisation of community benefits is likely to institutionalise the process surrounding it and make it less *ad hoc* and more prescriptive. Whether this will lead to the delivery of benefits better able to support community wishes, or foster social support for wind, remains to be seen.

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Appendix A. Summary details of on-shore wind energy projects in Wales and community benefits

Wind energy projects are arranged in chronological order, by date commissioned (for functioning projects) then by date of planning application for the two projects under construction. The community benefits listed are those that are *additional to* the capital investment, employment and rents to landowners/farmers.

Location (date of commissioning)	Installed capacity; construction cost (where known)	Community benefits	Developer/operator
1. Anglesey (November 1992)	7.2 MW; cost £8.5 m	No obvious community benefits	Commercial company
2. Powys (January 1993)	30.9 MW; cost £33.4 m	No obvious community benefits; information board at site	Commercial company
3. Powys (January 1993, but repowered March 2002)	7.2 MW; cost £6.5 m; repowering increased capacity to 15.3 MW	Community fund to local community councils, £7 K per annum (£1 K/MW/annum)	Commercial company
4. Ceredigion (March 1993, but repowered February 2004)	9.35 MW	No obvious community benefits	Commercial company
5. Rhondda Cynon Taff, (August 1993)	9.0 MW	Community fund of £9 K per annum (£1 K/MW/annum)	Commercial company
6. Powys (July 1994)	9.9 MW	Community fund of £5 K/annum and £100 K charitable trust; enhancement/restoration of wildlife habitats	Commercial company
7. Carmarthenshire (December 1994, but repowered June 2006)	5.5 MW	No obvious community benefits	Commercial company
8. Anglesey (July 1996)	5.6 MW; cost £6 m	Community fund of £5 K/annum (£0.9 K/MW/annum); enhancement/restoration of wildlife habitats	Commercial company
9. Powys (October 1996)	33.6 MW; cost £26 m	Community fund of £52 K/annum disbursed via local trust (£1.5 K/MW/annum); element directed to energy projects; enhancement/restoration of wildlife habitats; interpretation board and study centre	Commercial company
10. Ceredigion (January 1997)	2.4 MW; cost £3 m	No obvious community benefits	Commercial company
11. Powys, Phase 1 (April 1997), Phase 2 (2004); Phase 3 (2011)	1 × 0.6 MW turbine (decommissioned by 2004, replaced by Phase 2); Phase 1, 1 × 0.075 MW turbine (£83,000); Phase 2, 1 × 0.5 MW turbine (£350,000)	No community benefits for Phase 1; Phases 2 and 3, local offer community ownership (via shares); fund for local energy projects; information boards	1st turbine was developed by local environment centre, Phases 2 and 3 were community-led and community-owned
12. Anglesey (October 1997)	20.4 MW; cost £17 m	Community fund of £5 K/annum (£0.25 K/MW/annum)	Commercial company
13. Ceredigion (April 1998)	10.2 MW	Community fund of £10 K/annum (£1 K/MW/annum), disbursed through local committee	Joint venture between commercial company and local farmer
14. Conwy Phase 1 (September 1998); Phase 2 (December 2002); Phase 3 (January 2006)	Phase 1 0.6 MW (1 turbine); Phase 2 1.7 MW (2 turbines); Phase 3 0.85 MW (1 turbine). Total capital cost for all three phases £2.5 m	No obvious community benefits for Phase 1; Phases 2 and 3 provide £3–5 K/annum community fund (£1 K/MW/annum), with emphasis on energy projects; enhancement/restoration of wildlife habitats	Commercial company
15. Carmarthenshire, Phase 1 (February 2001); Phase 2 (2009)	Phase 1 3.6 MW, cost £3.5 m; Phase 2 7.8 MW cost at least £5.4 m	No obvious community benefits for Phase 1; Phase 2 provides community fund of approx. £10 K/annum (£1 K/MW/annum); enhancement/restoration of wildlife habitats; new paths on site	Initially farmer-developed, now commercial company

(continued on next page)

Appendix A. (continued)

Location (date of commissioning)	Installed capacity; construction cost (where known)	Community benefits	Developer/operator
16. Carmarthenshire (July 2002)	3.9 MW costs £2.5 m	Community fund of £6 K/annum (£1.8 K/MW/annum)	Commercial company
17. Conwy, Phase 1 (January 2003); Phase 2 (October 2008)	Phase 1 3.9 MW (3 × 1.3 MW turbines), cost £2.6 m; Phase 2: nine turbines, 11.7 MW	Benefits for Phase 1 focused on farm incomes; Phase 2 offered community fund of £15 K/annum to two community councils and £50 K at regional scale for energy projects (£4 K/MW/annum); scope for local share ownership; enhancement/restoration of wildlife habitats	Farmers' cooperative, but scope for local share ownership in Phase 2
18. Pembrokeshire, Phase 1 (September 2004) Phase 2 (June 2009)	Phase 1 0.5 MW (one turbine); cost £200 K Phase 2 (and repowering), 3, 2 MW	No obvious community benefits	Farmer/commercial company
19. Ceredigion (June 2005)	58.5 MW; cost £35 m	Community fund of £58.5 K/annum to local trust fund (£1 K/MW/annum), including local energy projects; enhancement/restoration of wildlife habitats	Commercial company
20. Denbighshire, (October 2005)	21 MW; cost £15 m	Community fund of £25 K/annum to community trust funds; enhancement/restoration of wildlife habitats	Commercial company
21. Powys (April 2006)	14.45 MW; cost '£11 m	Community fund of £21 K/annum to two local trust funds (£1.5 K/MW/annum); local road improvements	Commercial company
22. Neath-Port Talbot (July 2006)	32 MW	Community fund of £32 K/annum to local trust fund; enhancement/restoration of wildlife habitats; funded improvements to mountain bike trails	Commercial company
23. Swansea (November 2006)	1 × 0.25 MW turbine (second hand); cost £230 K	Community ownership – revenues (£20 K/annum) used to support energy saving measures in community	Non-profit company/partnership
24. Gwynedd (June 2008)	4.5 MW	Community fund of £3 K/annum, for energy measures (£0.75 K/MW/annum); enhancement/restoration of wildlife habitats	Commercial company
25. Powys (March 2009)	15.6 MW; cost £20 m	Community fund of £30 K/annum (£2 K/MW/annum) split one third to community projects, and two thirds disbursed through intermediary to energy projects; enhancement/restoration of wildlife habitats	Farmer owned/commercial company
26. Newport (December 2009)	5 MW	No obvious community benefits (energy is supplied to manufacturing firm)	Commercial company
27. Carmarthenshire (January 2010)	23 MW	Community fund of £75 K/annum, focused partly on energy measures (£3 K/MW/annum); enhancement/restoration of wildlife habitats; car parking and interpretation boards	Commercial company
28. Denbighshire (March 2010)	9.2 MW	Community fund spent via local trust fund, £3 K in first year	Commercial company

Appendix A. (continued)

Location (date of commissioning)	Installed capacity; construction cost (where known)	Community benefits	Developer/operator
29. Rhondda-Cynon-Taff (under construction December 2010)	10.4 MW	Community fund mentioned but no details	Commercial company
30. Neath Port Talbot (under construction December 2010)	26 MW	Community fund of £175 K/annum ^a disbursed through two town councils; enhancement/restoration of wildlife habitats	Commercial company

^a This would give a high level of £7 K/MW/annum of community benefits for wind farm no. 30. As we have not been able to find supporting data beyond newspaper articles, we have not transposed this data into Table 1.

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