

VIEWPOINT

WIND ENERGY AND JUSTICE FOR DISADVANTAGED COMMUNITIES

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Providing benefits to communities affected by wind-farm development is a matter of justice: a means of redressing the impacts on communities adversely affected by wind farms, not simply a means of cultivating acceptance and expediting planning consent. The scale of community benefit funds from developers is rising but more needs to be done to ensure that these funds are used to support lasting improvements in the areas around wind farms.

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Background

Urgency has become the watchword of energy policy. The UK Government has expressed the urgent need for rapid investment in large-scale, low-carbon energy infrastructure to address the twin challenges of climate change and energy security (DECC, 2011; MacKerron, 2009). But there is a social dimension to this urgency, too. If this imminent wave of energy investments is to be implemented in ways which benefit the communities around them, then the 'terms of exchange' on which energy development relates to its neighbours need setting now, not after the investment has taken place.

Governments have been aware that energy policy has implications for those living with these new facilities, but have tended to see the issue in terms of social acceptance (Owens and Driffill, 2008). If large-scale investment is to be expedited, 'something needs to be done' to prevent public opposition from delaying or derailing major energy generation schemes. Government has responded by reforming planning processes, to introduce centralised procedures for major schemes that are less susceptible to local challenges (DECC, 2011). Another response – until recently, less vigorously pursued in the UK – has been to consider ways in which communities might benefit from low-carbon energy, and encourage public support.

This *Viewpoint* examines community benefits from renewable energy projects, particularly wind power, but places two different concerns at the forefront of debate. Firstly, it seeks to establish the principles of justice for requiring wind-farm developers to provide some form of benefits to communities. It is concerned mainly with *distributive justice* – a concern for the fair distribution of costs and benefits in society – although distributive justice is intertwined with issues of procedural justice (Bell and Rowe, 2012). Viewing community benefits simply as devices for fostering social acceptance misses important issues of justice for communities living with large energy facilities.

Secondly, it examines how these benefits might be used to best serve the long-term resilience of the communities living with wind farms. Again, the emphasis on fostering social acceptance has eclipsed this question but it is vitally important; especially because much wind-farm development has taken place in rural or coastal areas suffering from economic, social and environmental disadvantage.

Key points

- Massive investment in renewable energy infrastructure is underway and urgent action is required to make sure that this is delivered in ways which benefit the communities affected.
- The provision of community benefit funds is one mechanism for doing this, but should help to deliver social justice – redressing the harms caused to those communities – not just foster acceptance of a scheme. This is especially important where renewable energy facilities are sited in disadvantaged areas.
- Community benefit funds are already growing in scale and this expansion, and their time-limited nature, provides a strong case for investing them in ways that would improve the economic, social and environmental resilience of the surrounding area.
- Redirecting a proportion of community benefits away from very localised initiatives to tackle more fundamental issues can be unpopular, but it is more widely accepted where greater benefits are obtained for more people.
- Argyll and Bute Council have shown that introducing local policies can increase the level of community benefits that wind energy developers provide. So too can the influence provided by land ownership, as Forestry Commission Wales is demonstrating through its National Forest Estate Wind Farm Programme.
- One way of translating community benefit funds from large-scale renewable energy projects into local resilience would be to channel a proportion of these funds into locally-owned renewable energy projects, as this can deliver a higher stream of economic benefits to the community than the initial funding and, potentially, provide a longer term legacy.

Introduction

What is meant by 'community benefits'? In the UK, the commonest form entails wind-farm developers providing funds to communities living closest to their project. The level of benefits is usually calculated in terms of £ per megawatt (MW) of installed capacity, to be paid per annum, with funds available for an array of community purposes. The benefits can take other forms, where developers directly implement investments in community facilities or environmental enhancement. Community benefits are usually seen as distinct from conventional economic benefits (such as jobs), though there are connections.

There are two important opportunities to be seized.

- *Increasing scale.* What were small-scale, ad hoc company practices in the 1990s have evolved into routine and increasingly significant financial flows. There are wind-farm projects around the UK where community benefit funds now exceed £100,000 per annum. As the scale of wind farms continues to increase, so too will these funds (Cowell *et al.*, 2007, 2011; Cass *et al.*, 2010).
- *Developmental potential.* With this increasing scale comes the opportunity to achieve something transformational, which begins to tackle the disadvantages faced by many of the rural and coastal communities set to live alongside wind farms, and leaves them more resilient. One exciting vision is that benefits flowing to communities from large, commercial wind farms could, over a 25-year period, leave the communities with a more sustainable, autonomous, locally embedded energy system, which retains more local employment and generates funds for other goals. Indeed, there are already community groups across the UK with this transformational aspiration.¹ Government advice on community benefits also encourages allocating money to sustainable energy measures (for example WAG, 2005) and some wind-farm developers already support such investments.

The analysis is linked to evidence from three case studies of community benefit provision: two looking at onshore wind, and a third at offshore wind. Each is focused on different aspects of the 'terms of exchange' between renewable energy development and local communities. It focuses on large-scale commercial wind energy developments because this is likely to remain the dominant form of renewable energy development into the medium term (DECC, 2009), but many of the arguments would apply to other large-scale renewable energy technologies. The study does not examine the community ownership of renewable energy in detail, but considers community benefits flowing from commercial wind energy to fund community-owned facilities.

Dimensions of justice in wind energy development

The relevance of intra-generational distributive justice

When it comes to renewable energy development and the relationship to climate change, the main dimension of justice is usually deemed to be distributive – concerned with the social distribution of ‘goods’ and ‘bads’ – and which is predominantly inter-generational. Thus, replacing fossil fuels and promoting renewables is a means of ensuring that future generations inherit both a stable climate and a portfolio of energy ‘capital’ equivalent in its capacity to underpin well-being to that enjoyed by the present (see Solow, 1986). Issues of intra-generational equity become bound up with these arguments when governments debate how the burden of effort in decarbonising national economies should be allocated between the present generations of richer and poorer countries.

Until recently, these global dimensions of justice have eclipsed issues of justice within nations that arise in addressing climate change. Indeed, localised concerns about the development of renewable energy facilities are often represented as a selfish, ‘NIMBYist’ unwillingness to accept ‘necessary development’ for the greater good (see, for example, Stratton, 2009).² Such NIMBYist interpretations of the issue neglect important justice dimensions to the relationship between wind energy developments and their host locations, which has both intra- and inter-generational dimensions.

To establish the relevance of intra-generational distributive justice one could start by looking at public responses to wind energy. Researchers regularly find opponents of wind-power projects expressing their concerns in the language of injustice, claiming that wind energy companies are exploiting ‘their environment’, causing adverse effects, while profits flow elsewhere (for example, Gross, 2007).

However, it seems insufficient to claim that injustice exists simply because the language of justice is thrown around in planning disputes. A major problem when talking about distributive justice and the development of wind farms (or other energy facilities) is that there is often little consensus on ‘harm’ (Haggett, 2012). It is undeniable that visual and landscape impacts of wind turbines greatly affect public responses to them, especially where they are seen as violating valued qualities such as openness, quietness and absence of technological structures, but there is boundless scope to dispute the significance of those impacts.³

In making the case for the relevance of distributive justice to the siting of renewable

energy facilities there is a need to tread carefully. However, a case can be made, based on the following arguments:

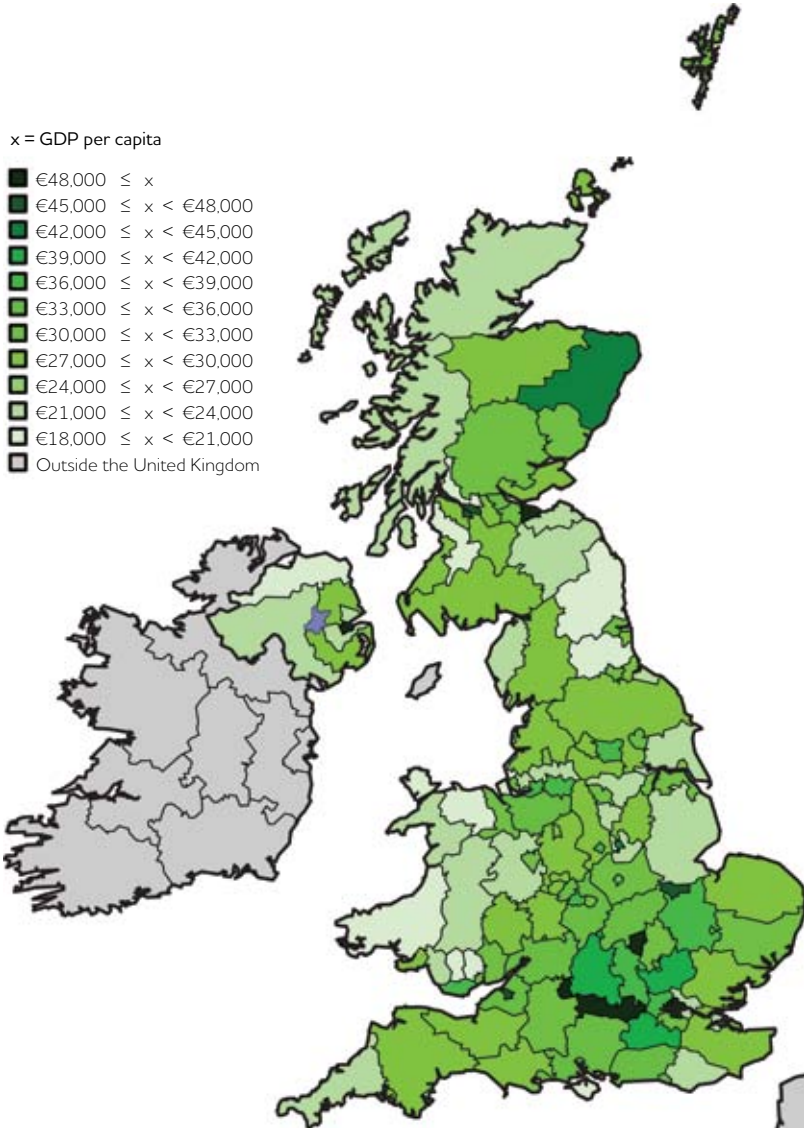
- 1 Wind energy facilities do create impacts that are widely seen as significant and adverse** – even if the effects are often sensory rather than toxic. By their nature, wind farms can gravitate towards spaces valued for their openness. The fact that most governments go to great lengths to protect special landscapes (like National Parks) from major industrial developments like wind farms is, in some way, a recognition of the potential of such facilities to harm particular environmental qualities. Wind-energy facilities can be large and have tended to become larger, with typical modern turbines now exceeding 100m in height. This increases the potential effects on pre-existing landscapes and the way that people relate to them (Pasqualetti, 2011). There are also risks to biodiversity, and impacts can arise from grid connections. Public concern about these effects cannot wholly be dismissed as unwarranted.
- 2 The distribution of impacts from wind farms falls unequally on society.** By their very nature, the effects tend to be spatially concentrated, as wind-energy developers pursue windier sites with fewer environmental restrictions and cluster turbines into wind farms. This may lead to a concentration of 'harms' on those living closest to such facilities, though some harms may have wider effects (perhaps on non-resident communities that use such landscapes, or through the knock-on effects of grid connections). Similarly, the distribution of economic benefits from wind farms falls unevenly. Beyond income streams to landowners or farmers, the conventional economic benefits to communities living with commercial wind energy schemes can be modest. Because the running costs of onshore wind farms are low, their requirement for operational and maintenance employment is also low: a large 50MW wind farm may require no more than four technicians (Munday *et al.*, 2011). In the UK, few of the jobs associated with constructing and manufacturing such installations have accrued to the rural areas in which they are installed (Munday *et al.*, 2011).
- 3** The third reason why justice is relevant arises from the spatial pattern of wind-energy developments in the UK, which are disproportionately felt by relatively disadvantaged groups. **Wind-energy development has gravitated towards places already adversely affected by previous environmentally damaging activity.** Large-scale wind-energy development is emerging within extensive tracts of managed coniferous forestry in Wales, areas of opencast coal-mining in the lowlands of central Scotland, and offshore environments in the North Sea already extensively exploited for oil and gas. There is a clear logic to this in that it means highly valued landscapes are protected, and previously industrialised

areas tend to have better infrastructure, such as grid capacity and access roads. It does, however, have consequences. While wind power is a technology with few irreversible environmental impacts⁴, the sense that some places are more susceptible to receiving the locally unwanted land uses required for modern (and now low carbon) lifestyles, can endure over time (Blowers and Leroy, 1994).

At the same time, many of the rural and coastal areas receiving large-scale wind energy are relatively disadvantaged, suffering from higher than average levels of deprivation, and geographic isolation, with ageing populations, youth outmigration, and a reliance on low-paid seasonal employment (Milbourne, 2011; Zsomboky et al., 2011). Van der Horst and Toke (2010) ascertained that areas which were less likely to oppose wind energy development tended to have populations with lower life expectancies, a lower propensity to vote in elections, and higher crime; factors which they take to be reasonable proxies of social disadvantage. Figures 1 and 2 show that areas with significant concentrations of wind farms – western Wales, Cornwall, Lincolnshire, north-east England, Lothian, Scottish Highlands – are also areas of below-average income; the affluent counties of southern England have very few such facilities.

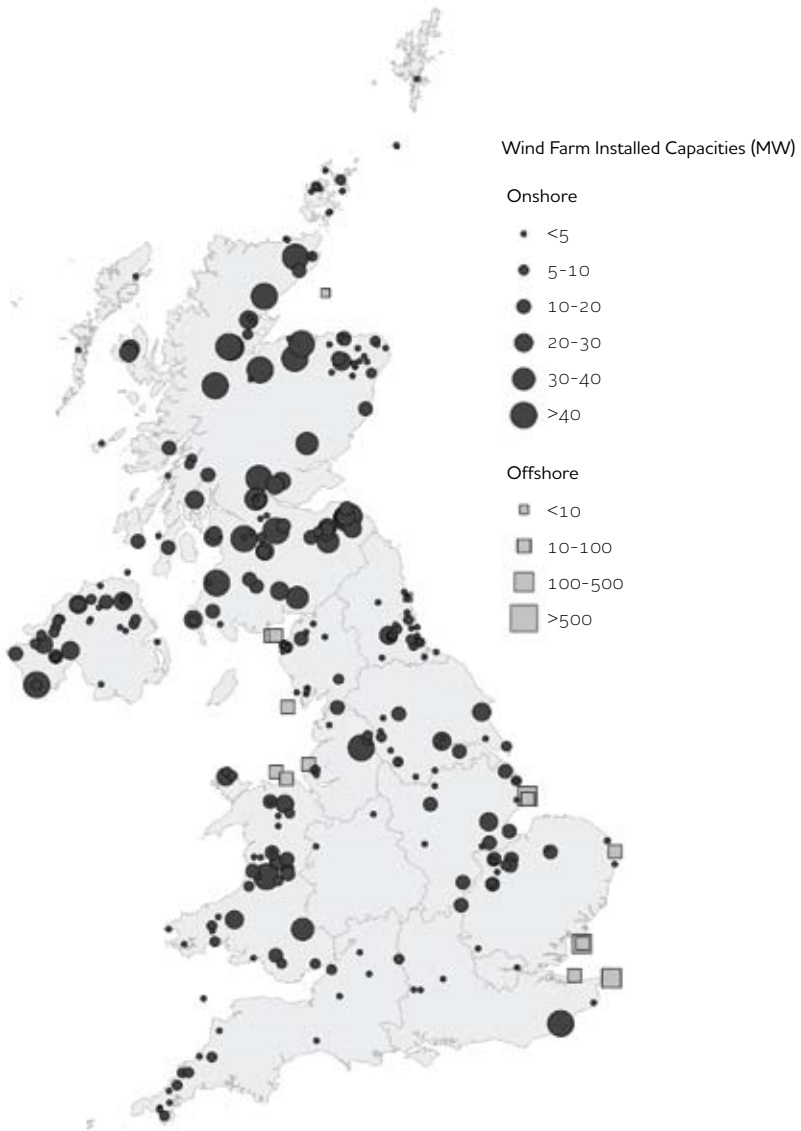
This argument is broad-brush, and does not claim that there is a cause and effect relationship between social disadvantage and wind-energy development. After all, remote areas tend to be both windy and socially deprived (van der Horst and Toke, 2010), while the Home Counties have less space for wind facilities and a lower wind resource. However, put simply: (1) the effects of wind farms can be significant and fall unevenly, and (2) where such developments gravitate towards already despoiled environments, co-existent with social disadvantage, there are good reasons to talk about the issue in terms of distributive justice, not just as a problem of social acceptability.

Figure 1: 2007 UK GDP per capita by area



Source: [http://en.wikipedia.org/wiki/File:Map_of_GDP_per_capita_in_the_UK_in_2007_\(NUTS_3\).svg](http://en.wikipedia.org/wiki/File:Map_of_GDP_per_capita_in_the_UK_in_2007_(NUTS_3).svg) (accessed 12 January 2012). File is from Wikipedia Commons. The spatial unit is NUTS3 areas. NUTS stands for 'Nomenclature of Territorial Units for Statistics', and the NUTS3 level is upper tier local authorities or groups of lower tier local authorities.

Figure 2: The location of UK wind farms, December 2010.



Source: Digest of UK Energy Statistics 2011, p.196.

Would fairer decision-making processes resolve the problem?

Although concerned principally with issues of distributive justice, debates about energy facility siting are equally permeated with questions about procedural justice – the fairness of decision-making procedures. Just as one might ask ‘who is the relevant community?’ that should be involved in energy policy and project decisions, and how they should be involved (see for example Bell and Rowe, 2012), so the question also arises in the consideration of community benefits. Identifying who is to be involved in discussions about community benefits is linked to questions of which community’s burdens warrant consideration. The parish or community council in which the wind farm is located is often the pragmatic answer, but this can miss communities that make use of the wind-farm landscape, or more dispersed groups with particular needs (Bell and Rowe, 2012).

Should we expect improvements to procedural justice to directly address distributive injustice? Looking at social attitudes, analysis of wind energy conflicts has shown that meaningful public engagement can make people more accepting of the outcomes (Gross, 2007; Devine-Wright, 2010; Haggett, 2012). Furthermore, evidence suggests that ‘community renewables’ – energy projects conceived, developed and owned by the local community – attract higher levels of support (Murphy, 2010; Warren and McFadyen, 2010). One could say that such community renewables embody higher levels of distributive and procedural justice: those potentially affected by the projects have more control over the development process, and stand to receive a greater share of the returns.

Clearly, there is significant merit in improving the procedural fairness of decision-making processes. However, it is unlikely wholly to eliminate the problems of distributive injustice. Overall, it is far from clear that the rate of decarbonisation of the energy sector that is required over coming decades could be delivered consensually by the combined effect of voluntary community decisions (see Barry and Ellis, 2011). In the UK, the expansion of community-owned energy generation faces a number of barriers (Stenzel and Frenzel, 2008; Walker, 2008), including shortage of capital, especially in more disadvantaged locations, where the rate of development is particularly dependent on public-funded grant schemes (Gubbins, 2010). Where large-scale, commercial facilities remain the main means by which the 2020 targets for decarbonisation will be met, so there will be a need to deal fairly with communities that receive energy developments in their midst that they may not wholly choose.

The role of community benefits

Why should communities benefit?

A number of rationales have been put forward for wind energy developers to provide community benefits (DTI, 2005).

As already observed, one major rationale is to **foster social acceptance**: the belief that community benefits make communities more accepting of major new energy developments. In practice there is limited evidence to suggest that providing community benefits changes opinions about development (Cass *et al.*, 2010; Davies, 2010; Cowell *et al.*, 2011; Strachan and Jones, 2012). Indeed, there is often more obvious anxiety that such gains should not subvert planning decisions. An additional concern is that to use social acceptance as the main rationale for community benefits would imply that communities happy to have these developments deserve no such provision. Yet acquiescence may be more common in areas characterised by social disadvantage (Blowers and Leroy, 1993), either because they are more likely accept the conventional economic benefits created (e.g. jobs), or possess less social capital with which to organise robust responses to developers (van der Horst and Toke, 2010). Of course, disadvantaged areas are not always tolerant of the impacts of development⁵, but there are risks in seeing community benefits as a device for securing social acceptance, especially if it implies that acquiescent communities deserve less consideration.

Energy companies regularly extol the virtues of fostering positive relations with the communities around their projects (Cowell *et al.*, 2011), and providing community benefits helps to demonstrate this **good neighbourliness**. This study does not dispute the virtue of good relations between companies and their surrounding communities, but questions whether this places the provision of community benefits on a sufficiently firm footing. Moreover, Dobson (2003) suggests that the obligations of environmental citizenship follow not simply from being part of a community but from a responsibility to address the harms caused. This leads to a rather different imperative for community benefits.

As noted above, it seems unlikely that society can always meet obligations to foster more sustainable forms of energy while simultaneously upholding all other social obligations (such as to protect environmental quality for local citizens and users of the project site). However, where judgements are made that it is in the public interest to allow major renewable energy development to proceed, this does not mean that the over-ridden obligations lose all of their moral force (Peterson and Hansson, 2004). Consequently the requirement for community benefits might be

characterised as one of **compensation**. Although the developers of wind-energy projects may be pursuing schemes that are socially beneficial, this can compromise environmental qualities that people might otherwise have expected to keep (Goodin, 1989), which gives rise to obligations for some form of redress. This study regards compensation as the most credible rationale for community benefits. Research shows that many stakeholders do see community benefits as compensation for harms and losses, even if developers are less keen publicly to justify community benefits in this way (Cass *et al.*, 2010).

What level of benefits should be provided?

Establishing the 'right' level of community benefits is not easy. If one links benefits to the level of harm, then one faces real difficulties in equating impacts in one realm (perhaps landscape, aesthetic) with potential benefits in another realm (employment, community facilities). The values at stake might be regarded as incommensurable (O'Neill, 1993), and one should expect the level of harm to be contested. Planning policy offers at best partial guidance. While adverse effects on acknowledged interests such as nature conservation or highway capacity can lead to requirements that developers make compensatory investments (such as habitat creation or highway improvements), planning policy may not encompass the many other practical, emotional and moral claims that different communities may make over a territory (Brown, 2007).

Two observations are key here. Firstly, the long-standing industry 'benchmark' for community benefits of £1000 per megawatt (MW) of installed capacity per annum (RenewableUK, 2011) seems very low. It falls below the sums that some recent projects have offered, of £5000 per MW, discussed below. It also falls below the equivalent revenue that a community might expect if they had some ownership stake in the facility. For example, the Stirlingshire village of Fintry negotiated community benefits that took the form of community ownership of a 2.5MW turbine within a wider, commercial wind farm. This stake will generate c£50,000 per annum while loans are being paid off, then £400,000 per annum thereafter.⁶

Secondly, the balance of power between the parties in community benefits negotiations is very important; an issue which ties together distributive justice and procedural justice. Research suggests that, until very recently, wind energy developers had the greatest freedom to determine how much community benefit to provide, based on their assessment of what is affordable and appropriate for a given project (Cowell *et al.*, 2007). This deference to developers is reinforced by the conventions of British planning which, as noted above, mean that the provision

of community benefits cannot legitimately be considered when making consent decisions unless they mitigate a specific, acknowledged impact (Ennis et al., 1993). Any influence exerted by 'host communities' extends only to the form of community benefits, not the level.

It matters a great deal who decides 'how much community benefit is enough?' One might reasonably be anxious that small, disadvantaged communities lack the capacity to negotiate a 'good deal' with major, international developers (see van der Horst and Toke, 2010). Giving potentially affected communities a more effective voice in decision-making processes may enable higher levels of community benefit to be delivered. It will also enable better appreciation of how the different communities affected by a wind farm project value their environment, and thus a more comprehensive assessment of benefits and harms.⁷

How should community benefits be used?

To date, it has generally been left to communities and wind-farm developers to answer this question. Typically, a new independent body (such as a community trust) is set up in the 'affected community', often defined in geographical-political terms as the parish council area in which the wind-farm is located, to oversee the allocation of monies. Funds are spent in response to the community's wishes on facilities, sports equipment, social activities and assisting with education. Where developers have wider expertise in the field of energy, a proportion of funding may be channelled into sustainable energy measures, like low-energy light bulbs or educational advisors. Developers also support measures to enhance wildlife habitats across the wind-farm site, to mitigate ecological impacts, but such measures are often seen as separate to community benefit funds (DTI, 2005; Cowell et al., 2007).

The flexibility of these conventional arrangements makes them popular with most companies and local communities (Cowell et al., 2011), but they suffer from a number of weaknesses:

- Interpreting 'the community' wholly as 'the parish containing the wind farm' can neglect other constituencies that use local resources but do not live locally.⁸
- Small communities may lack the capacity to pursue more significant projects, or attract match funding. To date, community benefit funds have made little provision for the costs of management of the funds themselves.
- Focusing on the immediate parish also begs questions about whether the most disadvantaged members benefit, or whether structural vulnerabilities which affect wider areas are being tackled.

These conventional arrangements are not seen as 'broken' to those involved, but they may be inadequate to the scale of the strategic opportunity that is now emerging. Arrangements that were fine for community benefits streams of less than £10,000 a year (as was the case with many smaller wind farms in the 1990s) may be less appropriate as sums increasingly exceed £100,000 per annum, and more than £1 million across the life of a wind farm. The benefit flows are also time-limited, tied to the projected lifespan of a wind farm, which may be only 25 years.⁹ An important question thus arises: how might this block of money be best spent to most enduring benefit for the communities involved?

Arguably, a wise investment is one that would leave communities affected by wind energy facilities better able to sustain their social, economic and environmental well-being into the future. Perhaps community benefit funds should be used to address, at the local level, the kind of resilience issues that renewable energy is designed to address at the national level – from environmental change, global economic uncertainty and the emerging era of peak oil (see Gubbins, 2010; Cynnal Cymru, 2011)? The concept of 'resilience' can be broadly understood as meaning the capabilities and capacities of individuals, communities, and economies to withstand, adapt and respond to profound shocks and anticipated change (Hudson, 2008). The meaning of resilience concepts is much debated (Adger, 2000; Duit et al., 2010), but the following commonly-identified qualities of resilient communities appear relevant to the kind of transformation that community benefit funds could be used to support (Hopkins, 2008; Simms, 2008; Jackson, 2009):

- *Diversity in the types of business, institutions and sources of energy, food and means of making a living.* Thus, resilient communities are those with strong indigenous sources of food and energy so that if outside supplies are disrupted, more of what is needed can be provided locally.
- *An emphasis on small-scale, localised activities within the capacities of the local environment, and cognisant of and adapted to its limits.* This is in place of expensive, large and sometimes predatory or invasive infrastructures, business and bureaucracies.
- *By virtue of requiring mutual use of local assets, capacities and resources, and localised production, trading and exchange, resilience also implies a healthy core or supporting economy of family, neighbourhood, community and civil society, strong in reciprocity, co-operation, sharing and collaboration.*

The scale of the wind farms and community benefits packages in the pipeline provides an opportunity to achieve transformational change, which tackles some of the disadvantages that rural and coastal communities face. One possibility is that benefits flowing to communities from large, externally-owned wind energy projects could be invested in ways that leave the communities with a lower carbon, more autonomous, locally-embedded energy system, capable of generating financial returns into the future, which is less dependent on fossil fuel imports, and supports local employment. This study has already noted the difficulties communities face in becoming owners of sustainable energy projects, especially the availability of finance (Gubbins, 2010). There is under-exploited scope to channel community benefit funds into sustainable energy schemes with a higher level of community engagement and ownership. As previously noted, the Stirlingshire village of Fintry negotiated community benefits which took the form of community ownership of a turbine within a wider, commercial wind-farm scheme.¹⁰ Although community ownership is not without risks, such schemes do offer greater local control and the prospect of an income stream into the future. Extensive investment in energy conservation measures would be an alternative.

Lessons from practice

This section presents three case studies of community benefit provisions. Each focuses on a distinct geographical sphere, subject to multiple wind-farm projects and containing areas with economic and social problems. The Argyll and Bute and Forestry Commission Wales case studies focus on institutional innovations for extracting enhanced levels of community benefits for wider social purposes. The English east coast case examines the different direction in which community benefits have evolved with offshore wind development.

The methodology used for the case studies was part desk study, part new primary research. For each case study, data was taken from documentary analysis (policy documents, company statements, online information) supplemented by three to four semi-structured interviews with policy officers (local government or government agencies), community bodies, and wind-farm developers/operators.

Argyll and Bute, Scotland

Across the UK, a number of local authorities have sought proactively to influence levels of community benefits obtained from wind energy, and steer the use of those

benefits (for example Powys County Council, 2008). Although there is anecdotal evidence that these interventions can produce more favourable outcomes (Strachan and Jones, 2012), such initiatives have not always been popular with developers or communities, especially where they seek to divert benefits away from communities geographically closest to the wind farms, or channel them towards wider social and economic needs (Cowell *et al.*, 2011). This case study reviews the approach taken by Argyll and Bute Council in western Scotland. It assesses how far the Council's policy has improved the bargaining position of rural communities, and fostered a more strategic perspective.

Background

Argyll and Bute has witnessed a rapid growth in commercial wind schemes. About 120MW of capacity is installed at present but a further 280MW is in the pipeline (Argyll and Bute Council, 2010). Set beside this strong potential for renewable energy is a local economy with problems of depopulation, relatively low income levels, and a lack of opportunity in the most peripheral areas; those same areas are resource-rich sites for onshore wind. The array of community benefits schemes linked to current wind developments is given in Table 1.

The community benefit schemes that appeared with the first wind farms caused Argyll and Bute Council some concerns. Though the community benefits had been spent on an array of popular local social activities – from pipe bands and highland games to golf clubs and heritage display boards – the evolution of schemes in an ad hoc manner between large developers and small communities was seen as not maximising benefits for the county as a whole. The amount of funding provided also differed significantly between projects.¹¹ The ways in which developers determined 'who is entitled to benefits?' exposes the difficulties of mediating between different communities, raised above.

'The principle on which each of the existing funds has been developed is that of funding being available only to those communities whose community council area the wind farm is sited on. This situation has created dissatisfaction among other communities who may be equally affected by the location of the wind farm in terms of views, noise, disturbance during the construction phase, heavy vehicles on the road network etc, but do not receive any direct benefits from the wind farm.'
(Argyll and Bute, 2004: pp85–86).

Potential tensions between 'local' and 'wider' benefits were expected to become more acute with the anticipated increase in size of wind energy facilities. There were

also worries about the sustainability of the governance arrangements for community benefit funds, which often depended on a supply of willing volunteers to commit their time to running community trusts or similar bodies.¹² All these concerns came together, about ten years ago, to prompt the Council to take a new approach to community benefits.

The 'new model'

The 'new model' comprised the development of a Protocol and Concordat, and was designed to be separate from the formal planning and consent process for wind farms. It is also entirely voluntary with respect to the developer. At the outset a Concordat is developed between the wind developer and the council which sets out the Community Wind Farm Trust Fund (CWFTF) arrangements relevant to the sites to be developed. The detailed principles for the CWFTF were approved by the Council in 2004:

The Council recommends that a sum of £2,000 per megawatt of installed capacity should be the minimum payment for community benefit with an additional £1,000 per megawatt based on the actual output of the wind farm.

Developers will be encouraged to split future trust funds as follows: 60% to the immediate local community through a local trust fund or equivalent, and, 40% to the wider Argyll and Bute Community through supporting the work of the Argyll, Lomond and the Islands Energy Agency (Alienergy). (Argyll and Bute Council, 2005, p3)

Alienergy had experienced strong demand for its services with inadequate resources and the Council believed that there was a rationale for the agency taking revenues from renewables projects and channelling these into energy efficiency improvements across the whole county. The 60:40 funding split was deemed to be a reasonable reflection of the limited capacity of smaller community groups to disburse community benefit funding (Argyll and Bute Council, 2004), but it was anticipated that by securing higher payments overall such communities could still be better off than before.

An important capacity-supporting role is played by the Argyll and Bute Windfarm Trust, also set up by the Council. What happens is that the developers pay their community benefits into the Trust, which thus becomes an 'umbrella' for the sharing out and scrutiny of wind farm payments to the local communities. While the day-to-day administration of the local share of community benefit funds, and the

Table 1: Main operational wind farms in Argyll and Bute, and community benefit provisions

Location	Developer/ Operator	Capacity	Community benefits arrangement
Beinn Ghlas May 1999	National Wind Power; RWE	16 turbines 8.4MW	£8,000pa. Community trust fund operated at local level by residents in Taynuilt. Fund is administered by the Taynuilt Community Council (TCC), awards being given to community organisations. RWE make an annual payment to the fund for each year of the 25 year life of the wind farm. The amount paid into the fund increases each year; in 2005 the fund received £9,317.
Deucharan Hill (Carradale) Dec 2001	EON UK Renewables, B9 Energy	9 turbines 4.8MW	£10,500pa goes to Kintyre Windfarm Trust (through Argyll and Bute Windfarm Trust) and benefits two community council areas. Also an undisclosed annual sum for applications direct to the developer.
Beinn an Tuirc (Carradale) Dec 2001 (extension: Sept 2008)	ScottishPower Renewables, B9 Energy	46 turbines 30MW (ext. 19 turbines and 38MW)	With original scheme £21,000pa went to Kintyre Windfarm Trust via Argyll and Bute Windfarm Trust benefiting two community council areas. Original project – extensive habitat enhancement plan on adjacent ground to benefit eagles and habitat for prey species by clearing 450 hectares of conifer plantation and regenerating heather moorland.
Tangy (Kilkenzie) Dec 2002 (ext. Jan 2006)	Scottish and Southern Energy	15 turbines, 12.75MW (ext. 7 turbines at 5.9MW)	Funds to Kintyre Windfarm Trust, benefits one community council area. With Tangy 2 Extension annual value of community fund to be not less than £7,140, but with the potential to reach as much as £10,000pa.

Location	Developer/ Operator	Capacity	Community benefits arrangement
Cruach Mhor, Glendaruel, July 2004	ScottishPower Renewables, B9 Energy	35 turbines, 29.75MW	Trust set up in 2003 by Argyll and Bute Council and CRE Energy (Scottish Power) who provide an annual grant. The first payment of £21,000 was received in 2003. Subsequent payments rise with inflation. Some monies placed towards two-year rural development officer for Colintrave and Glendaruel Development Trust (CGDT) in association with Leader monies. "The Development Trust has prioritised renewables schemes, and these will form the basis of the first year's work, alongside smaller ... projects like getting laptops into village halls".
Isle of Gigha Dec 2004	Gigha Renewable Energy Co	3 turbines at 0.68MW	Community-owned facility; no community fund, provides majority of energy on Island of Gigha.
Isle of Tiree	Tiree Renewable Energy Ltd	1 turbine 0.9MW	Net profits back to community, and monies also to Tiree Trust.
Ardkinglass, Clachan Flats, June 2009	ScottishPower Renewables	9 turbines, 15MW	ScottishPower Renewables (SR) supported the creation of a new community trust fund, administered by the Clachan Flats Windfarm Trust and the Inveraray Community Council, with the remit of supporting local projects and organisations. Latter operating through Argyll and Bute Windfarm trust which gets four-ninths of monies coming from SR. Around £15,000 expected to be invested by SPR annually for the 25-year life of the wind farm (see ScottishPower 2010).
An Suidhe, Inverary	RWE npower Renewables	23 turbines and 19.3MW	Still in development at July 2010, but expected fund worth £28,500pa, index linked; decisions on fund allocation to be made locally broadly supporting environmental education, community and charitable activities.

Source: Derived from various sources including BWEA (<http://www.bwea.com/ukwed/operational.asp>); Argyll and Bute County Council, 2010; Macintosh, 2008; ScottishPower 2010; RWE 2011.

adjudication of applications, falls to local community councils, the Argyll and Bute Windfarm Trust is able to provide governance and legal support.¹³

Appraisal

Although the Concordat in Argyll and Bute has been in place for over five years, it remains difficult to comment definitively on its effectiveness – a reflection of the long time taken for some wind farm consents to be approved. At the time of instigation, the target rate of c£3000/MW was higher than the UK average of £1000/MW, though less ambitious than the £5000/MW being achieved in some places. Nevertheless, the relationship cemented by the Concordat and ongoing relations between the Council and developers have seen some willing to improve their 'normal' benefits offer. Thus ScottishPower Renewables (2011) have shifted towards benefit payments of £1000/Megawathour of electricity generated (rather than 1 MW of installed capacity), which is anticipated to deliver benefit flows 25 per cent above conventional company practice. Other developers report increasing their community benefit offer from £1000/MW to £2000/MW to bring it into line with the Council's minimum recommended level.¹⁴

In terms of the spatial distribution of community benefits, the share channelled through Alienergy has been used to further increase benefits to both the local areas around wind farms and the wider region. In Kintyre, for example, the community benefits from the wind farm are used to employ a renewable energy officer who goes out to all the schools in Argyll, working with the teachers' curriculum to provide renewable energy advice.¹⁵

As the concordats are voluntary, it matters whether developers support it. While some developers see merits in having a system that provides accountability for how their funds are spent¹⁶, the pursuit of consistency and a re-distributive element has encountered some resistance. Developers expressed some concern about whether communities will see the involvement of Argyll and Bute Council as 'interference'¹⁷, and prefer to retain a degree of flexibility in how community benefits are organised and disbursed. In some cases, however, developers have argued that community benefits should be tailored to issues of local needs, raising explicitly those questions of justice raised earlier – whose burdens should matter?

Also remember that a lot of the original wind farm sites were on high hills in the middle of nowhere and a lot of our sites are much closer to communities now and some quite impoverished communities as well. So there's different needs from us as a partner in this and we have to be flexible¹⁸

While it is too soon to judge whether the new arrangements have led to greater attention to issues of sustainability and resilience in the use of community benefits, it is clearer that the support and collaborative arrangements put in place are generating returns. The fact that local community representatives from the wind-farm trusts come together annually under the auspices of Argyll and Bute Windfarm Trust to report on progress and disbursements has stimulated social learning:

... you can see as time goes on, the capacity of those groups growing and their confidence growing and I think what we've certainly seen is that they are starting to look more strategically.¹⁹

Council officers also feel that the 60:40 split between local and regional benefit streams commands support among local communities in the two main schemes where it has been applied (extensions of existing wind farms at Beinn na Tuirc and Deucharan Hill).²⁰ The original benefit funds were allocated to the small communities where the wind farms were located, and nobody outside of those areas could apply for those funds. However, over time, a wider spatial community and set of needs has been recognised. This has happened with the small rural communities of Carradale and Kintyre, which have come to acknowledge the needs of Campbeltown, the nearest service centre:

... they've now said that people within Campbeltown can apply to that pot so they've recently gave money to the picture house in Campbeltown, they've given money to the doctors to pay towards a defibrillator. ... So they've started to kind of widen their horizons almost.²⁰

Forestry Commission Wales preferred bidder programme

The second case study analyses the influence exerted by landowners in the organisational personage of Forestry Commission Wales (FCW). The Welsh Government's planning policy for wind-energy development is seeking to channel large-scale wind energy projects (schemes over 25MW) into seven 'Strategic Search Areas' (WAG, 2005). A large proportion of the land within the Strategic Search Areas is upland plateau currently used for industrial, coniferous forestry, and thus falls within the landownership of FCW. As a result, FCW – as landowner of these sites – is placed in a pivotal position.

To manage development pressures, FCW set up the National Forest Estate Wind Farm Programme: a tendering exercise to identify a single preferred developer for the blocks of national forest land within each Strategic Search Area (FCW, 2006).

This exercise included a set of criteria for community benefits against which bids were evaluated, summarised as follows:

- proposals for consulting local communities and key stakeholders;
- proposals for the provision of community benefits, to be expressed in £/MW over the lifetime of the development;
- assumptions made for the economic impact/benefits that the project would generate, for Wales and at the more local level, through construction, operation and maintenance.

FCW used a scoring system to evaluate each tender: 30 per cent of the available 'points' were allocated to the 'community dimensions' above; 30 per cent to financial dimensions of the project (payments, financial plan), and 40 per cent to technical aspects (such as the project plan, and impact on forest management) (FCW, 2006).

The importance of this case is that it indicates how control over land could influence the benefits that flow to communities from renewable energy development. This can be inferred by comparing the community benefits that developers have offered in their forest estate projects to their 'offer' on other sites, and interviewing those involved (see Davies, 2010). Table 2 shows the community benefits coming forward from the successful bidders for forest estate sites.

Appraisal

The data set is small – just four different energy companies are involved – and, at the time of writing, the wind power projects have yet to gain planning permission. Nevertheless, the results are interesting. It is clear that the proposed level of community benefits exceeds the £1000-£2000/MW that was the norm during the previous decade (Cowell et al., 2007). Moreover, the total sums involved are significant: possibly £75 million in total across the 25-year commercial life of the programmed wind farms, before one even considers the scope for match funding. To assess the actual impact of the FCW programme, however, three questions must be answered.

Firstly, to what extent is the level of community benefit being offered higher than the level the companies are offering on their other, current wind-farm development projects? Closer investigation suggests that two of the option holders, ScottishPower Renewables and Scottish and Southern Energy, have not enhanced the level of benefits in response to the preferred bidder programme but stuck with their standard approach (Davies 2010; Strachan and Jones, 2012). However,

Table 2: Potential community benefits from ‘forest wind’ schemes

Strategic Search Area (SSA)	Successful Bidder	Scale of project	Community benefit offers	Annual sum
A) Clocaenog Forest	RWE	32 turbines (64–96MW)	£6000–8000/MW per annum (depending on data source); upfront lump sum to environmental education and energy efficiency in local schools; possible contribution to cover costs of administering package.	At least £400K per annum, plus initial lump sum.
B) Carno North (Dyfnant)	ScottishPower Renewables	40-50 turbines (80–120MW)	Providing £2000/MW per annum.	At least £160k per annum.
C) Carno South	No scheme yet			
D) Nant-y-Moch	Scottish and Southern Energy (SSE)	proposal between 128MW and 160MW	£2000/MW per annum plus a bonus paid on the wind farm’s output; 2.5% of ROC recycle income; £3000/MW as initial lump sum to support energy efficiency measures.	At least £256,000 per annum, plus initial lump sum of at least £384,000.
E) Pontardawe	Nuon		Less developed but see SSA F.	
F) Pen y Cymoedd	Nuon	299MW	£6000/MW per annum; provision made for upland peatland restoration, and off-road cycle trails.	£1.5–1.8 million per annum.
G) Brechfa Forest	RWE	one of 56–84MW and one of 24–36MW	£5000/MW per annum over the lifetime of both projects.	At least £500,000 per annum across both projects.

the other option holders enhanced the level. For RWE, there was a step-change increase from their previous practices.²¹ What Nuon offered for their FCW schemes is not outside the range of what they have offered across their portfolio of wind-energy development, but £6000/MW is undoubtedly at the top end (Davies, 2010).²²

Secondly, is the way that FCW are exercising their landownership rights the main cause of these increased community benefit offers? Officers in RWE and Nuon, and FCW felt that the criteria for the bidding process were influential i.e. the desire to win the options had encouraged companies to 'bid high' on community benefits. But it is not the only factor. The fact that the sites available have a good wind resource also improved the profitability of schemes. The Welsh Government's strategic planning guidance also made the Forestry Commission's Strategic Search Area sites very attractive to large-scale developers, as there could be a firmer expectation that planning permission would be forthcoming. The fact that Nuon's other proposed projects for Strategic Search Areas, outside the forest estate, propose similar levels of community benefits,²³ suggest that the planning advantage may be as strong a motive as the tendering process.

Of course, the same planning policy framework that makes FCW sites attractive, and places FCW in a strong negotiating position, makes it harder for communities to register legitimate objections to major wind development, reducing their bargaining power. This illustrates further why such community benefits ought to be seen as a corollary of justice, rather than a payment to secure community support.

The third question is whether the programme of community benefits is more likely to be invested in ways to improve the resilience of the communities concerned, many of which are remote areas with significant social and economic disadvantage. Any answer must be provisional at this stage, as the forest estate wind schemes are still progressing through the consents process. Officers in FCW and the Welsh Government are alive to the potential. The tendering advice indicated that community benefits should be used in ways consistent with sustainable development, and FCW officers have drawn up contracts that will help the community benefit packages deliver long-term, sustainable benefits. Most of the companies proposed that a proportion of community benefit funds be channelled to sustainable energy matters. Although it is too early for the precise purposes to be specified, there is certainly the potential for funding sizeable, community-owned sustainable energy assets.

For each forest estate site, the relevant communities will be slightly different and fair processes will be required to work out a 'just distribution' of community benefit funds. Although the community benefit package for Pen-y-Cymoedd could exceed £35 million over the 25-year life of the wind farm, the 'catchment' includes higher-population Valleys communities with intense needs. In very sparsely populated areas of mid-Wales, some kind of split between immediate neighbouring communities and wider areas may be the best way of ensuring key needs are tackled. Importantly, RWE suggested allocating some funding for the administration of community benefits, addressing the problems of limited capacity among small rural communities (Cowell *et al.*, 2007; Davies, 2010).

Offshore wind farms and the English east coast

Significant growth in renewable energy capacity is coming from offshore wind, much of it located along the east coast of England (EEDA, 2010). However, questions surround how the benefits of this low-carbon economic growth will be distributed, and what 'community benefits' might mean in relation to offshore wind developments. Many schemes lie offshore from areas characterised by low wages, with concentrations of economic and social disadvantage (Lincolnshire Research Observatory, 2011), parts of which are also vulnerable to sea level rise (Zsamboky *et al.*, 2011).

This analysis focuses on three sets of wind farms, the main details of which are set out in Table 3 opposite. All three were under construction at the time of writing.

An important common feature is that in each case the local response has been mostly positive or muted – at least towards the wind turbines themselves. At Gunfleet Sands, there was no evidence of significant community or local opposition to the development during the planning phases. For the Lincs scheme, there were concerns expressed about the ecological impacts from environmental bodies, but little opposition from the local public.²⁴ Skegness residents generally thought that wind-energy development would benefit the area, but felt little ability to influence planning decisions.²⁵ With the London Array, however, concerns were raised by the community of Graveney in Kent about the impact of constructing the substation near to their village. Analysis below shows how these different patterns of concern fed into the form taken by 'community benefits' in each project.

Lincs offshore wind farm

With the Lincs scheme, none of the relevant local authorities pressed for community benefits to be provided, for a number of reasons. The schemes were

Table 3: Offshore wind schemes and community benefits

Project (developer)	Size	Location	Community benefits
Lincs (Centrica)	270MW (75 X 3.6MW turbines)	8km offshore from Skegness, 15km from Hunstanton.	Environmental education; contribution to nature reserve visitor centre; support to local awards and community groups.
Gunfleet Sands (DONG Energy)	172MW (48 turbines)	7km offshore from Clacton-on-Sea, Essex.	Focus on employment and income from construction and operation.
London Array (DONG Energy, EON, Masdar)	1000MW (341 turbines)	Area of 232km ² between Margate and Clacton, 20km offshore.	Fund for nature conservation, and habitat enhancement measures: £300,000 per annum community benefit fund to Graveney; student bursaries and other support to local schools.

largely seen as neutral in terms of visual and noise impact on local communities; as being driven by central government policy and the need to fulfil strategic renewable energy objectives; and the developments are welcomed in terms of the potential investment that they bring to Lincolnshire communities, like Skegness, which are struggling economically (Lincolnshire Research Observatory, 2011; p. 4).²⁶

In this context, the community benefits were shaped substantially by the developer, Centrica, and through consultation and liaison with local communities and key stakeholders. This helped to improve understanding of the impacts of the project but also to gain some appreciation on 'the needs of the area'.²⁷ Although Centrica did not ultimately create a specific community benefit fund related to the Lincs project, consultations did lead to the identification of a number of projects in Lincolnshire in which Centrica has invested²⁸: no such schemes have been supported in Norfolk.

Centrica have sponsored a local environmental educationalist to visit schools in Skegness, informing children about wind energy and the specific offshore developments occurring locally. Another major component has been a £115,000

donation to support the redevelopment of the visitor centre at Gibraltar Point nature reserve.

These community benefits could be seen as investments in the assets of the area; Gibraltar Point visitor centre has been identified as helping boost tourism potential. It might also be seen as responding to concerns expressed by organised conservation interests about the effects of the Lincs wind farm on wildlife in the Wash. A more obviously impact-based rationale has emerged with some of the onshore ancillary equipment. The disruption to a Skegness residential area entailed by installing the electrical cable connection resulted in the developer putting some money into a local community centre to provide it with a heating and hot-water system.

Gunfleet Sands (I and II)

There are no conventional community benefit funds associated with the Gunfleet Sands development either. Here community benefits are understood by the developer and local stakeholders mainly in terms of the direct and indirect economic benefits from the offshore wind farm projects. Many parties point to the positive impacts of construction-related jobs, and the ongoing employment benefits to the small port of Brightlingsea, which is the base for Operations and Maintenance (EEDA, 2010).²⁹

While offshore renewable energy is seen in Essex as a growth sector that can add resilience to the regional economy,³⁰ legitimate questions remain about how many long-term jobs can be captured by local communities, beyond the construction phase. Operational and maintenance jobs are perceived as more sustainable, albeit lower in number, alongside the wider supply chain opportunities which may emerge. In this regard, there are ongoing efforts to build up and promote the business and skills support and port infrastructure to help the offshore wind supply chain develop in the region. Various actors are collaborating to cement the status of Harwich as a wind port, with aspirations also to develop an Alternative Energy Visitor Centre in Clacton.

London Array

As with Gunfleet Sands, the developer of the London Array wind farm in the outer Thames Estuary has been involved in activities to develop the supply chain, to help channel jobs to local communities. A 'meet the buyer' event was organised in 2010; companies from across Kent had the opportunity to meet the London Array team and some of the developer's main contractors and find out how they could benefit from the wind farm. The 'O & M' (operations and maintenance) base is to be built at Ramsgate, and will deliver 90 full-time jobs once phase one is operational.

The main community benefits package is centred on the Kent village of Graveney, and arises because the substation is located nearby. The package is worth £850,000 and includes the following components:

- From 2010, and each year for the next 10 years, London Array will award a three-year bursary of £3,000 per annum (index-linked) to one local student towards the cost of tuition fees to study a university course in a subject related to sustainable development, science or engineering.
- Annual, index-linked donations of £2,000 are made to three schools in the area to fund extra-curricular activities related to sustainable development.
- A £200,000 fund for nature conservation has been established, to be implemented by Kent Wildlife Trust, incorporating measures to protect endangered species in the Graveney area, especially the Great Crested Newt, and tree planting.
- There is also a £300,000 community fund established in May 2010, to be managed by the Graveney and Goodnestone Trust.³¹

Appraisal

This review shows that community benefit provision from offshore wind is patchier than that for onshore wind (Cass et al., 2010), with more emphasis on conventional economic benefits: jobs, income and wider multiplier effects. Some projects have not offered community benefit funds at all and where they have been offered, this has been at lower levels. If it is assumed that the community benefit fund of the London Array wind farm is £850,000/MW per annum³² then, given the 1000MW installed capacity, this falls below the £1000/MW industry 'baseline' for onshore wind (RenewableUK, 2011).

Is this difference justified? It is often claimed that visual impacts are lower for offshore wind farms than for onshore developments. This may be broadly true, especially as schemes move further offshore, but there is evidence to show that the effects on seascape and sense of place can arouse public concern, at least in some locations (Devine-Wright, 2012; Gee, 2010). Other user communities with interests in fishing, wildlife or marine recreation may be concerned about specific environmental impacts. Where localised onshore communities have been affected by ancillary equipment (such as substations and cable routes), then community benefits have been forthcoming.

Another dimension is the distribution of benefits. Offshore wind farms have been larger developments than most onshore wind farms – approximately £725

million³³ for the Lincs project, for example – and generate larger numbers of jobs in construction, operations and maintenance. However, it is still the case that most turbines are built elsewhere, and installation is dominated by firms from outside the coastal communities. One might argue whether, pro rata, 60 jobs in Operations and Maintenance is significant compared to the size of the initial investment, and whether all sections of the community will be able to secure them. Nevertheless, key actors clearly still see the employment benefits to local economies as significant, especially where they are concentrated into particular communities. If the harms are seen as lower and the (economic) benefits as greater, perhaps there is less distributive injustice?

It may also be that key stakeholders in local government believe that offshore wind is still an 'emergent' renewable energy technology, and not yet ready to accommodate the additional costs of community benefits, unlike 'established' onshore wind (Cass *et al.*, 2010).

It is questionable whether this is a full explanation, as other factors may discourage coastal communities from engaging with offshore wind-energy projects and pressing for further benefits. Apathy towards the future can be common in depressed coastal communities (Zsamboky *et al.*, 2011, 40). At the very least, economic disadvantage makes employment benefits alone look very attractive to key local decision-makers, and subdue the inclination to press on the issue of community benefits. A low or minimal level of community benefits thus becomes the corollary of local acquiescence.

There may also be a degree of procedural injustice in decision-making processes, in so far as local communities may perceive themselves less able to challenge projects. All energy-generating projects over 50MW have been subject to centralised consent procedures operated by central government through Section 36 of the Electricity Act. Given their size, this applies to all offshore wind farms (as well as similarly large onshore wind farms). In this process the local planning authority is an important consultee but not the prime decision-making body. Certainly, local authorities and other communities may be consulted very carefully by developers both prior to and during the application process. Yet the more centralised consenting regime may generate the feeling that there is little scope for effective, local negotiation.

One can see how the geographical setting of offshore wind farms makes the relationship with 'the local community' even more complex than it is onshore

(Devine-Wright, 2012), and creates problems for effective public engagement. The number of communities that might feel in some way related to a stretch of coast, and thus affected by an offshore wind farm, may be larger, fall across administrative boundaries, and embrace towns with tens of thousands of inhabitants. Consequently even much larger community benefit funds may be comparatively small when spread across this larger population. This may explain why some companies tend to liaise more with particular, organised, sectoral stakeholders (Devine-Wright, 2012), some of which – such as wildlife groups – may also be anxious about the ecological effects of offshore wind farms.

However, these procedural difficulties do not seem sufficient reason for setting aside community benefits altogether. For example, the 90MW Rhyl Flats wind farm in North Wales – admittedly closer to the shore – operates a community benefit fund disbursing funding for community projects to the two nearest council wards in Conwy and Rhyl. The demands of distributive and procedural justice may just mean that more creativity is required.

Key learning points from the case studies

Looking across the three case studies, key findings emerge:

Intervention by public bodies can increase community benefits. Intervention by public bodies can help push up the level of community benefits that wind farm developers provide. This was observed both in Argyll and Bute and with the Forestry Commission Wales's preferred bidder programme. The achievements of such initiatives can have wider, indirect effects, by influencing actions elsewhere. For example, the experience of Forestry Commission Wales (FCW) has encouraged forestry bodies in other parts of the UK to specify higher minimum levels of community benefits in tenders for their sites.

Landowners can exert influence. FCW's programme hints at what might be levered from developers, for communities, by those that control the land. Moreover, exerting leverage through landownership avoids the problems associated with linking community benefits to the issuing of planning permission. There will be parts of the country where receiving a greater share of the benefits from renewable energy generation and supply would reinforce the case for community land ownership, a link already exploited by community land buy-outs in Scotland (Murphy, 2010).

On government land, community benefits could flow from royalty payments.

Royalties are payments to the owner for the licensed use of their asset – in this case land or the seabed. In Wales, the royalties from wind farms on Forestry Commission land flow to the government and this had been the case with offshore wind farms, where the role of 'landowner' for marine sites is taken by a government body, the Crown Estate. However, things are set to change offshore with the opening of the Treasury's proposed 'Coastal Communities Fund' (HM Treasury, 2011; HM Government, 2012), as detailed in Box 1.

Box 1: Coastal Communities Fund

April 2012 is the start of the Treasury's Coastal Communities Fund, linked to the royalties from offshore economic activities, which will be channelled into local communities around the UK. The fund will be worth 50 per cent of the Crown Estate's marine activities – renewables, but also other sectors like sand dredging – and total £23.7 million in its first year. The fund will operate by receiving bids for projects from local authorities, businesses, communities and social enterprises. The goals are primarily economic – projects must show that they support 'sustainable economic growth and jobs' (HM Government, 2012: 3) – but include equipping communities to better adapt to change, and renewable energy (HM Treasury 2011).

Questions arise about the initiative: there are no guarantees it will last beyond 2014, and groups will inevitably vary in their capacity to bid. However, in the short term at least, the level of resources for 'community benefits' from offshore renewables could increase.

While community benefits have typically been derived from company profits, the allocation of royalty payments in this way opens up an additional funding stream for communities affected by the use of crown (government) land for energy generation.

Community benefit funds can shift from a more localised focus to address a wider array of community needs.

In various ways the three case studies have illustrated connections between procedural and distributive justice, as decisions are made about which communities should be engaged in discussions about, and receive, community benefits. Redirecting community benefits away from traditional 'response mode' projects in the most adjacent local communities towards wider strategic purposes, or more dispersed needs, remains controversial (Cowell *et al.*,

2011). However, local authorities and other intermediaries may be better able to justify allocating some resource to strategic needs where – as above – their intervention helps to increase the overall level of community benefits, enabling a wider array of constituencies to benefit: communities of place and communities with an interest in the wind farm location. A willingness to allocate community benefits towards broader needs can also emerge as trust develops between the main parties, as witnessed in Argyll and Bute.

Conclusions

This Viewpoint establishes a justice-based rationale for establishing community benefits linked to wind energy schemes, particularly large-scale commercial facilities. It has identified the risks of distributive injustice, based on the scope for such large facilities to harm particular environmental qualities of places, and the propensity of such facilities to gravitate towards rural and coastal areas already suffering from social, environmental and economic disadvantage. This may not be true of all wind-farm developments, nor do all sections of society perceive wind farms to have harmful consequences. Nor is this an edict to alter practices around siting of these developments. The conclusion is simply that it is important to recognise these justice dimensions to the siting of renewable energy facilities, to indicate that there can be uneven social and economic consequences arising from low-carbon development.

Secondly, justice is a preferable rationale for providing community benefits than presenting it as a device for fostering social acceptability. This could legitimise offering fewer benefits to those communities that readily accept development; yet positive support – and acquiescence – is more widespread in places characterised by disadvantage (van der Horst and Toke, 2010). Seeing community benefits as a corollary of justice makes them a social obligation, rather than something which developers can choose to provide or not. It is also a more truthful reflection of the limited power of potential host communities, as planning and policy frameworks increasingly assert the necessity of major renewable energy development (for example DECC 2011; WAG 2005), and diminish the legitimate scope for local objections.

This study also explored how community benefits from wind power might be deployed to tackle some of the social and economic issues facing disadvantaged rural and coastal communities where wind energy is emerging. It would be wise to invest in measures likelier to leave those communities more resilient, in contrast to previous eras of fossil-fuel exploitation, which left mining communities with concentrations of social, economic and health problems. Beyond this our

suggestions are not prescriptive, though they have flagged up the scope for using community benefits to invest in measures which reduce dependency on increasingly expensive fossil energy and tackle climate change. A case has been made for using some of the community benefits from commercial wind developments to support local ownership of renewable energy, which would give communities a future stream of benefits that could exceed in scale the initial community benefit fund – as in Fintry, Stirlingshire, where community benefits were used in precisely this way.¹⁰

Two practical institutional issues arise from this conclusion: what steps might be taken to increase the community benefit flows from large-scale renewable energy, and how might one deploy these benefits for more strategic purposes, above and beyond the kind of immediately popular, small-scale local activities that have dominated practice to date? Through local council policy and the judicious exercise of land-ownership rights Argyll and Bute Council and Forestry Commission Wales have been able to enhance community benefit provision, enabling a wider range of constituencies to be satisfied.

Further steps should be taken to scale-up community benefit provision, and to help channel a proportion of these resources to measures with long-term developmental benefits. Hearteningly, since this paper was conceived in late 2010, there has been a host of initiatives across the UK which aim to do just that:

- In Scotland, the information asymmetries between communities and developers is to be redressed by the creation of a national register detailing the community benefits agreed with developers (Scottish Government 2010). This will help communities to negotiate with developers with a firmer knowledge of what has been achieved elsewhere.
- The emergent UK-wide Coastal Communities Fund (see Box 1 above) ignites a debate about the division of benefits between royalties for the Government and local communities where renewable energy projects are developed on crown land.
- Companies, too, are seeing the developmental potential of community benefits. In Scotland, Scottish and Southern Energy (2011) are upping their standard community benefit offer to £5000/MW, but putting half into a 'Scotland Sustainable Energy Fund', to support skills development, community energy schemes and environmental improvements in the wider region.

It is encouraging that ideas which have been circulating for several years (Cowell *et al.*, 2007) are beginning to come to fruition. However, with such significant volumes

of wind energy currently in the planning system, there is no time to delay if the terms of exchange between developments and communities are to be founded on a just basis. The prize is a significant one: a low-carbon energy revolution that not only addresses global obligations to future generations, but which fosters long-term resilience in the communities that live alongside the infrastructure.

Notes

- 1 See for example Amen Awel Tawe in South Wales (<http://www.awelamantawe.org.uk/> accessed 19 December 2011) or the Fintry Development Trust in central Scotland (<http://www.finitydt.org.uk/index.php?page=home> accessed 19 December 2011).
- 2 We acknowledge that disagreements about the necessity of any particular energy technology is an important dimension of social conflict about renewable energy (Barry and Ellis, 2010), but there is not space to consider this in detail here.
- 3 We leave aside debates over whether the noise and other sensory impacts of wind farms can cause health problems for particular people.
- 4 Except for access roads, concrete foundations and cabling.
- 5 Some may utilise 'environmental injustice' as part of their efforts to resist.
- 6 See <http://www.finitydt.org.uk/index.php?page=home> accessed 19 December 2011
- 7 We are grateful to Chris Groves for this point (see also Peterson and Hansson 2004).
- 8 The provision, at Fynnon Oer wind farm South Wales, of funding the enhancement of mountain biking trails, illustrates how such user communities can be served.
- 9 This is a reasonable assumption, given that most wind farm operators propose running their turbines for 25 years. It may be that intermittent repowering and replacement schemes keep a wind farm present for longer than this, but the basic principle – that this round of energy investment will not be there indefinitely – is sound.
- 10 See <http://www.finitydt.org.uk/index.php?page=home> accessed 19 December 2011

- 11 Argyll and Bute (2004) <http://www.argyll-bute.gov.uk/moderngov/Published/C00000188/M00001735/> 11 Argyll and Bute (2004) <http://www.argyll-bute.gov.uk/moderngov/Published/C00000188/M00001735/AI00017429/SReporttoSPCCConcordatwithScottishPowerPostwithPreagendaalterationsJune2004.docA.ps.pdf>
Argyll and Bute Council, Development Services, 1 July 2004, *New opportunities for renewable energy community trust funds*
- 12 Interview, Wind farm developer, 6 June 2011.
- 13 Interview, Argyll and Bute Council, Lochgilphead, 6 June 2011.
- 14 Minutes of meeting of Argyll and Bute Council 24 March 2011, Planning, Protective Services and Licensing Committee, Item 3: Kilchattan Wind Farm, <http://www.argyll-bute.gov.uk/moderngov/ielssueDetails.aspx?llid=53392&Opt=3>, accessed 22 December 2011.
- 15 Interview, Argyll and Bute Council, Lochgilphead, 6 June 2011.
- 16 Interview, Wind farm developer, 6 June 2011.
- 17 Interview, Wind farm developer, 6 June 2011.
- 18 Interview, Wind farm developer, 7 June 2011.
- 19 Interview, Argyll and Bute Council, Lochgilphead, 6 June 2011.
- 20 Interview, Argyll and Bute Council, Lochgilphead, 6 June 2011.
- 21 Compared to wind farms at Carno A and B, Causeymire, Ffynnon Oer, Farr, Little Cheyne Court and Goole Fields (Davies, 2010).
- 22 Compared to their wind farm projects at Mynydd y Clogau, Hirddywel, Swinford, Mynydd Waun Fawr, Rhyd Ddu and Rheola (Davies, 2010).
- 23 At Mynydd Waun Fawr, Rhyd Ddu and Hirddywel (Davies, 2010).
- 24 Exeter University case study – see: http://geography.exeter.ac.uk/beyond_nimbyism/deliverables/reports_Lincs_Final.pdf
Accessed 12 July 2011

- 25 Exeter University case study – see: http://geography.exeter.ac.uk/beyond_nimbyism/deliverables/reports_Lincs_Final.pdf
Accessed 12 July 2011
- 26 Interviews with planning officers in East Lindsay District Council and Lincolnshire County Council, 11 July 2011.
- 27 Ibid.
- 28 Interview with two representatives from Centrica (public affairs officer in renewable, and head of CSR team), 12 August 2011.
- 29 Ibid.
- 30 Interviews with TDC councillor, 12 July 2011 and Regeneration Manager, Essex County Council, 12 July 2011.
- 31 <http://www.londonarray.com/downloads/grant-award-guidance-notes-Feb-2010.pdf>
(accessed 11 July 2011).
- 32 The online information for the community benefits for the London Array make it difficult to assess which elements are to be paid per annum.
- 33 See: http://www.centrica.com/files/pdf/centrica_energy/lincs_newsletter.pdf (accessed 12 July 2011).
- 34 The Section 36 consent procedure is currently being superceded by procedures under the Planning Act 2008 and the provisions for Marine Spatial Planning. Nevertheless, it remains the case that consents for large energy facilities – whether offshore or onshore – are not determined by local planning authorities.

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