



Wind farms in rural areas: How far do community benefits from wind farms represent a local economic development opportunity?

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Although the large-scale deployment of renewable technologies can bring significant, localised economic and environmental changes, there has been remarkably little empirical investigation of the rural development implications. This paper seeks to redress this through an analysis of the economic development opportunities surrounding wind energy development in rural Wales. The paper concludes that the economic development outcomes to rural areas from wind generation projects to date have been questionable. Increasing the flow of conventional economic benefits to rural economies in terms of incomes and jobs is shown to be difficult because of the nature of the local supply side in remote areas. Partially as a consequence of this, developers of wind farms have come to routinely provide diverse forms of community benefits to 'affected communities', but these have yet to evolve into significant tools of economic development. In any case, the flows of revenues from community benefits are dwarfed, in quantitative terms, by the revenue streams that might be channelled to rural areas through a broader community ownership of wind energy projects. However, although a few local successes have been achieved, the scope for realising the returns from community ownership remains low in the Welsh case, with a series of impediments considered. We close the paper by suggesting means through which economic outputs might be improved.

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1. Introduction

The large-scale deployment of renewable technologies can bring significant, localised economic and environmental changes. While the expansion of renewable energy in the UK is predicated substantially on its contribution to reducing CO₂ emissions and the amelioration of climate change (BERR, 2008), there remains a need to consider localised economic and environmental trade-offs associated with such projects. This paper focuses on the rural economic development opportunities surrounding wind energy development.

Although wind energy has been a dominant feature of renewable energy expansion in many European countries (Szarka 2007) – dominant in terms of both the volume of capacity installed and in the level of academic attention – there has been limited empirical investigation into the economic consequences of wind power in rural locations. This is intuitively surprising, given that the burgeoning

analyses of wind power planning conflicts in the countryside often reveal immense public sensitivity about the uneven distribution of economic costs and benefits (Devine-Wright, 2005; Woods, 2003; Wolsink, 2007). However much of this work is concerned with perceptions of (dis)benefits rather than actual income streams. Certainly, there is a well-developed body of research on the economic impacts of more conventional fossil fuel and nuclear energy facilities. However applying this to the renewable energy sector is difficult, to the extent that each energy technology presents different trade-offs for recipient localities.

Wind power schemes tend to have some common generic characteristics (compared to large-scale fossil and nuclear facilities). Schemes are typically smaller in terms of electricity output, dependent on locations with adequate wind energy resources and often placed in more sparsely populated areas with smaller communities (Hanley and Nevin, 1999). In many instances, therefore, contemporary wind developments occur in rural areas with specific economic development challenges, not least if one understands improvements in rural development in terms of increased gross value added and productivity, and increasing convergence (however, see Pike et al., 2007 for alternatives).

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This geographical coincidence between wind energy and rurality has brought with it attractive policy narratives – that renewable energy in general, and wind energy in particular, represents an opportunity for sustainable rural development (see, for example, Hain et al., 2005; Huttunen, 2009; Stevenson and Richardson 2003 for analysis of this policy discourse in Wales). However, the extent to which this goal can be realized in practice has the potential to illuminate wider theoretical debates about rural development. On the one hand, exploiting renewable energy appears to allow rural communities to re-embed their economies in ‘clean’, locally available resources – to create new ‘eco-economies’, as Kitchen and Marsden (2005) describe them – which might be more economically and environmentally sustainable than current, subsidy-dependent agricultural systems. Such opportunities also chime with calls for greater community engagement in rural economic development (Day, 1998; Edwards, 1998). On the other hand, questions arise about the capacities of (different) rural communities to ‘plug into’ the complex, supra-local technical systems of energy provision, governed by corporate actors and policy arrangements that operate at broader spatial scales (Marvin and Guy, 1997; 2001), and capture economic benefits for local areas.

This paper examines how far wind energy development represents an additional local economic development opportunity for rural areas through the case of wind farm development in rural Wales. This is considered a particularly useful lens through which to investigate these issues for the following reasons.

First, the Welsh countryside potentially represents amongst the most efficient sites for wind scheme development in terms of available resources, meaning that rural Wales has featured strongly in the UK push towards renewable energy targets.¹ Moreover, new wind capacity is expected to grow rapidly in Wales in the coming decades. Welsh Assembly Government (WAG) policies have sought to encourage 800 MW of additional on-shore wind capacity by 2010, with higher renewable energy targets in prospect for 2020, and an expectation that much of this too will be on-shore wind (Welsh Assembly Government (WAG), 2005a, 2005b). To deliver on its targets WAG planning guidance identified seven Strategic Search Areas (see Fig. 1) suitable for large-scale wind energy development, amounting to a significant concentration of development potential on specific, remote areas of rural Wales.

Second, the expected increase in new wind capacity in Wales, and its spatial concentration, is bringing the issue of economic benefits to affected communities higher up the policy agenda. While developers and WAG have regularly emphasised the economic opportunities for the rural economy arising from this expansion (see for example WAG, 2008: para 2.15), it raises a number of questions. Existing and proposed wind power infrastructure in Wales is often adjacent to smaller rural communities that are characterised by persistent economic disadvantage yet, at the same time, wind farm developments have been connected to a series of environmental externalities for these communities, not least in terms of a reduction of landscape quality (Woods, 2003). Issues have arisen about the extent to which these externalities may be offset by economic impacts considered in more conventional terms (e.g. new employment opportunities).

We consider the extent of these economic impacts later in the paper, but the sense that they are likely to be limited is a further factor driving developers to provide various forms of ‘community benefits’ for those close to wind energy sites. The desire to increase and improve the provision of such community benefits has

attracted significant attention in Wales, as in the rest of the UK, from local government (Powys County Council, 2009) and national (WAG, 2005a,b; 2008), as well as key public agencies. For example, the Forestry Commission, whose estate overlaps significantly with the Strategic Search Areas identified for major wind energy development, specifically asked potential developers to address community benefits in its programme to allocate the development rights (Forestry Commission Wales, 2009). In our analysis we give particular attention to the form and scale of these community benefits, and consider whether they represent an additional local economic development opportunity.

The remainder of the paper is structured as follows. Section 3 describes the research undertaken to inform this paper. Section 4 examines the pattern of local economic benefits deriving from current wind farm developments in rural Wales. Section 5 analyses the community benefits that have been offered to date in Wales, and considers the extent to which community benefits provisions can genuinely enhance local economic development prospects in rural areas where new wind farm infrastructure is being developed. The discussion in Section 6 considers two issues arising from the case: How far might the flow of economic benefits to rural economies in more conventional terms be improved? How far can wind generation projects become a real developmental opportunity for local communities? This latter includes a discussion of whether community ownership of wind generation has the potential to lever greater development opportunities. Next though, we examine the various factors shaping and rationalising the provision of community benefits in conjunction with new wind power capacity.

2. Evolution of community benefits schemes

Attempts to define ‘community benefits’ in the context of wind energy development immediately fall foul of the complex and contested nature of ‘community’ (see for example Walker and Devine-Wright, 2008). Research conducted for the UK government identified the ‘community’ concerned as ‘communities of locality’ – i.e. areas close to, and affected by, wind turbines – rather than ‘communities of interest’, while recognising that the spatial extent of such localities has no clear boundary (DTI, 2005). Nevertheless, ‘community’ might differ according to the nature of the benefit under discussion – with people accepting that ‘local’ employment benefits from wind energy component manufacturing may accrue to factories in the wider region, whereas other benefit streams should be directed to communities close to the wind farm site (CSE et al., 2007a). In further defining the ‘community’ which might benefit, one needs to recognise distinctions between benefits which accrue directly to just a few individuals located within a geographical community (such as farmers), and those which accrue to many or all individuals.

This multiplicity of definitions of community is matched by the array of ‘benefits’ that have been provided. Reviews of community benefit provisions across the UK (Cass et al., in press; Community Viewfinders, 2007; CSE et al., 2007a,b; RegenSW, 2004) reveal a wide diversity of initiatives, most of which have been led by the wind developer in liaison to varying degrees with local community members. Table 1 summarises the types of community benefits that have come forward, including more conventional economic benefits of investment spend and jobs.

There is no general statutory necessity for energy-related projects to have community benefit provisions. However, in the case of wind energy developments in the UK, community benefits schemes have become a common adjunct. Why might this be the case?

At one level the present array of community benefits programmes may be a by-product of a particular UK wind development

¹ Renewable energy provided 5.5% of the UK’s electricity in 2008, a third of which came from on-shore wind, some way short of the target of supplying 10% of electricity from renewables by 2010 (DECC, 2009).

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