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Evolving energy landscapes in the South Wales Valleys: Exploring community perception and participation☆

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ABSTRACT

Emerging and future sustainable energy systems will greatly impact upon landscapes and are likely to require wholesale societal transformation. In Wales, recent policy proposals to achieve decarbonisation prescribe greater roles for local and community energy. However, wider citizen engagement and public discourse on comprehensive energy transformations appear somewhat stagnant. The 'Stories of Change' project has sought to catalyse more plural public debates around energy futures. As part of the project, we explored past and present everyday energy relationships with communities in the Valleys of south Wales. At a time of energy transition, and legislative and policy flux, the Valleys afford opportunities to reveal stories about past and present energy experiences and relationships in order to gain enhanced understanding into emerging social meanings of new energy infrastructures and evolving energy landscapes. Here we focus on relationships with 'old' energy landscapes; how these and the prevailing socio-economic landscape influence the perceptions and creation of emerging ones; and, how communities are engaged and involved in the making of new energy landscapes. We consider finally how these might inform implementation of proposed energy policy, especially in a Welsh context.

1. Introduction

Wales was arguably the 'world's first carbon-based economy' with energy-based societal transitions resulting from its early development of iron and coal industries (Wang and Eames, 2010). Having led global carbonisation, unwittingly in the vanguard of a revolution that now presents an existential threat through climate change, the Welsh Government,[1] has sought to lead a low-carbon agenda. It has proposed decarbonisation targets that exceed those set by the UK Government Climate Change Act (2008) (Welsh Assembly Government, 2010). However, there is sometimes a perceived lack of clarity over control of energy powers between the UK and Welsh Governments (Upton, 2014). Importantly, the Welsh administration is dependent upon the UK Government for planning decisions over large-scale energy generation (see Table 1), and constraints in its devolved powers militate against a more comprehensive Welsh-specific energy policy (Strachan et al., 2015).

Nevertheless, the Environment and Sustainability Committee of the National Assembly of Wales[2] has proposed that Wales should establish a clear vision for its energy future, arguing that use of its existing powers and levers can help achieve that (National Assembly for Wales, 2016). Amongst its recommendations is greater support for local and community energy. Moreover, it proposes that reduced carbon emissions and energy demand should be delivered through the Well-being of Future Generations Act (WFGA) (Welsh Government, 2016a). This Act came into force in April 2016 and is viewed as 'one of the most holistic pieces of sustainable legislation to be passed worldwide' (FuturePolicy.org, 2016). It is a keystone of the new legislative landscape in Wales that enshrines sustainable development as a central organising principle. As such, it is intended to work in harness with the Environment Act (2016), aimed at sustainable natural resource management to create a low-carbon economy (Welsh Government, 2016b), and the Planning (Wales) Act 2015 (Welsh Government, 2015).

The WFGA places a duty on public bodies to improve the social, economic, and cultural well-being of current and future generations. It sets out seven well-being goals that must be considered across their

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[1] The devolved Welsh Assembly Government was renamed Welsh Government (Llywodraeth Cymru) under the Wales Act 2014.

[2] The National Assembly for Wales is the democratically elected body that represents the interests of Wales and its people, makes laws for Wales and holds the Welsh Government to account.

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Table 1
Devolved energy powers in Wales.

Offshore	Projects of 350 MW or below in Welsh territorial waters
Onshore – dealt with through local authority planning powers	Generation projects of up to 350 MW Sub-stations and distribution networks up to 132 kV

The table shows which the devolved planning and consenting powers held by the Welsh Government (Wales Act, 2017).

whole decision-making. Three directly reference the low-carbon agenda and climate change:

- *Prosperous Wales* – 'a low-carbon society which recognises the limits of the global environment and uses resources efficiently and proportionately (including acting on climate change)'.
- *Resilient Wales* – 'a nation… with healthy functioning ecosystems that support social, economic and ecological resilience and the capacity to adapt to change (for example, climate change)'.
- *Globally Responsible Wales* – 'a nation which takes account of its actions making a positive contribution to global well-being'.

In addition, through the WFGA, public bodies must adopt five ways of working that necessitate greater public engagement: Long-term Thinking; Prevention; Integration; Collaboration; and, Involvement. The Act also requires Welsh Government ministers to produce a set of measurable national indicators to assess progress towards the well-being goals (Welsh Government, 2016c). Some are directly relevant to future energy directions in Wales:

- increasing renewable energy capacity.
- percentage of dwellings with adequate energy performance.
- reducing emissions of greenhouse gases.

Other indicators too, however, have implications for energy policy. These include the percentages of people who feel able to influence decisions affecting their local area and are satisfied with its liveability.

Arguably, the legislation and proposed policy provide impetus towards the 'soft' energy pathway characterised by Lovins (1977). This is starting to manifest itself in the emergence of decentralised and smart grids for example, mainly involving renewables (Verbong et al., 2013; Juntunen and Hyysalo, 2015). Recently, the Re-energising Wales project (2016) has proposed that Wales can meet projected energy demands wholly from renewables by 2035, through a dispersed model maximising community and locally-based generation.

Importantly, the implications of these and other developments, such as peer-to-peer energy generation, extend beyond simple public acceptance of new technologies. Rather, they demand enhanced public participation (Goulden et al., 2014), and wholesale societal transformation, including changes in cultural norms (Owens and Driffill, 2008). However, in the UK, meaningful public debate on energy appears somewhat stagnant. There is a relative dearth of citizen engagement around comprehensive energy transformations (Demski et al., 2015), and a tendency to neglect the diversity of everyday experiences of energy (Day, 2015). Moreover, there can be exclusion of social dimensions in future energy prospects (Demski et al., 2015), and a danger that policy makers discount public voices deemed not to be appropriately 'neutral' (Mohr et al., 2013).

Consequently, our Stories of Change project has sought to catalyse more imaginative thinking and action on low-carbon futures by unearthing the vitality and variety of relationships between society and energy (Stories of Change, 2015). Importantly, co-production between researchers, arts practitioners and communities is fundamental. Together, we have sought to create space for shared exploration of energy relationships using creative approaches including digital storytelling, oral histories, and performance; these are explored further in a series of related papers, e.g. Tyszczuk and Udall (2015). Crucially, stories are a central motif and organising principle for these approaches. They offer a universal and engaging route to explore energy relationships and imagine possible energy futures. Moreover, they can help to conceptualise new energy systems, helping to create sociality, and lead to wider engagement. They can also facilitate multi-disciplinary co-working (Tyszczuk and Udall, 2015). In addition, stories can communicate different ideas about the consequences of change for everyday life by unearthing and illuminating different perspectives and attitudes towards those (Andrews, 2014). With respect to low-carbon transitions and climate change, stories can facilitate collective wider engagement (Gearty, 2008, 2015; Project Aspect, 2011) and have been suggested as a way to help shape energy policy (Janda and Topouzi, 2015).

Through a specific work package of the Stories of Change project, entitled 'Everyday Lives', we worked with communities in the Valleys of south Wales. One of the UK's former major coalfields, the Valleys have struggled socio-economically since the demise of deep coalmining. Now, some thirty years later, the region is witnessing the emergence of new renewable energy landscapes, especially wind. Accordingly, at a time of energy transition, and policy flux in Wales, the Valleys afford a great opportunity to reveal stories about past and present energy experiences and relationships in communities with the aim of gaining enhanced understanding into emerging social meanings of new energy infrastructures and evolving energy landscapes. Thus, in this paper, we focus on relationships with 'old' energy landscapes; how these and the prevailing socio-economic landscape influence the perceptions and creation of emerging ones; and, how these communities are engaged and involved in the making of new energy landscapes. Taken together, we consider how these might inform implementation of proposed energy policy, especially in a Welsh context.

2. Landscape perspectives in energy transitions

It has been proposed that a landscape-focused perspective can augment not only our understanding of energies, but also energy policies (Nadaï and Van Der Horst, 2010). Dynamic interactions between natural and cultural forces change landscapes, impacting not only the physical environment, but importantly people's perceptions and values affecting the ways in which landscapes are subsequently shaped and used (Antrop, 2005). Energy production is a foremost driver of landscape change (e.g. Selman, 2010; Nadaï and Van Der Horst, 2010; Plieninger and Bieling, 2012) and, with commitments to decarbonisation, will be increasingly so in future. This will necessitate 'unprecedented transformation' of the physical and intangible environment (Stremke, 2012), with new energy sources surfacing 'literally and figuratively' and becoming ever more 'tangible and visible' in the everyday environment (Sijmons and Van Dorst, 2012).

As such, landscape transformation is a common source of contention in energy transitions (Pasqualetti, 2011a). Often, this has resulted in opposition with windfarms, for example, triggering dissent especially over their siting (e.g. Wolsink, 1989, 2000, 2007; Devine-Wright and Howes, 2010). As is well established, objections extend to wind beyond so-called NIMBYism (e.g. Wolsink, 2000; Van der Horst, 2007; Devine-Wright, 2007). Pasqualetti (2011a) has identified common central issues, regardless of location, ranging from immobility and immutability through to solidarity, imposition and place, which are responses to everyday relationships with landscape.

Based on experience of the Danish island of Samsø, Stremke and Van den Dobbelsteen (2012) contend that close collaboration with residents and appropriate community leadership can create new energy landscapes resulting in environmental, societal and economic benefits. As they admit, however, the island's environmental and socio-economic characteristics offer a particular set of circumstances and other landscapes, especially urban, present more difficult challenges.