



My neighbourhood, my country or my planet? The influence of multiple place attachments and climate change concern on social acceptance of energy infrastructure



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ABSTRACT

Research on place attachments and identities has made an important contribution to understanding social acceptance of low carbon infrastructure, which are often objected to by local communities. However, a focus on local attachments predominates in studies to date, neglecting the potential role of national and global attachments and identities on energy beliefs and attitudes, despite the fact that large energy infrastructures are not only local in significance or function. To investigate this, survey data was collected from a representative sample of UK adults (N = 1519), capturing place attachments at local, national and global levels, climate change concern, beliefs about power lines and support for energy system change. Findings show significant differences in infrastructure beliefs and attitudes depending upon relative strength of attachments at different levels, controlling for personal characteristics. Analyses of variance revealed that individuals with stronger national than local or global attachments were less likely to support European grid integration; those with relatively stronger global attachment were most likely to support decentralised energy and those with relatively stronger local attachment were most likely to protest against a nearby power line. In addition, those with strong attachments at local, national and global levels were most willing to reduce energy demand, and those with weak attachments were least likely to trust grid companies. Relatively stronger global than national attachment was positively associated with support for decentralised energy, with this effect partially mediated by climate change concern. Explanations for the findings and implications for future research are discussed.

1. Introduction

Policies to mitigate climate change are leading to widespread changes to energy systems. Low carbon energy projects, such as wind farms and nuclear power stations, along with associated grid infrastructure such as transmission power lines, produce significant environmental and social impacts and typically meet with strong objections from affected communities that is often dubbed ‘NIMBYism’ (Not In My Back Yard, Dear, 1992). In recent years, researchers have strongly critiqued the NIMBY concept as a way of describing and explaining local responses (e.g. Wolsink, 2006; Devine-Wright, 2011c; Burningham et al., 2015) and proposed alternative lines of inquiry that are less pejorative and more empirically grounded.

One of these is the place-based approach (Devine-Wright, 2009), which begins with the premise that particular locations are characterised by multiple attributes (Agnew, 1987): physical coordinates, social relations and emotional bonds referred to as place attachments (Altman and Low, 1992). Research has shown that place attachments

are important in explaining social acceptance of energy proposals. For example, local residents with strong place attachments are likely to object to an energy project that is interpreted to be ‘out of place’ (e.g. to ‘industrialise’ a rural place typically regarded as ‘natural’ – Vorkinn and Riese, 2000; McLachlan, 2009; Devine-Wright and Howes, 2010; Batel et al., 2015). However, if proposals are interpreted to maintain or promote place distinctiveness and historical continuity, then local residents with strong place attachments are likely to give support (e.g. Devine-Wright, 2011a, Devine-Wright, 2011b; Venables et al., 2012). It has also been shown that place attachments can influence support for smaller scale, community-led energy projects (van Veelen and Haggett, 2016).

Despite these insights, the literature on place attachment and social acceptance of low carbon energy can be critiqued for adopting a narrow spatial focus, solely addressing attachments with the places or sites where energy projects are proposed or constructed. This approach rests upon two implicit assumptions. First, that energy infrastructure projects

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are *only* local in character. Second, that local places are the *only* places that people feel a sense of attachment with. Both of these assumptions are questionable, particularly in the case of energy infrastructure linked with low carbon energy projects and the target of this research – high voltage power lines – whose function transcends any one specific locality by supplying electricity as part of a ‘national grid’.

Similarly to large-scale low carbon energy projects, proposals to construct new power lines often meet with strong local objections in many countries, including the US, Sweden, Norway, Germany, the UK and Ireland (e.g. Priestley and Evans, 1996; Zoellner et al., 2008; Soini et al., 2011; Aas et al., 2014). Although research into social acceptance of power lines has been rather neglected (see Devine-Wright and Batel, 2013), existing research suggests that, when thinking about power lines generally, people tend to perceive them as necessary to transmit power and guarantee security of supply; on the other hand, locally, they are perceived as impacting negatively on environmental (e.g. landscape aesthetics), social (e.g. health concerns from electro-magnetic fields) and economic dimensions (e.g. property values) (e.g. Porsius et al., 2015).

Findings reported here arise from a study of beliefs about high voltage power lines with a nationally representative survey of UK adults ($n = 1519$). Over £100 billion investment in grid networks is forecast for the next decade to connect new low carbon energy projects to the grid and to upgrade existing lines (Department of Energy and Climate Change, 2011). Therefore, understanding public beliefs about power lines is of strong importance for the achievement of climate mitigation targets. To address the narrow spatial focus in past research, this study aimed to investigate for the first time how local *and* non-local place attachments influence public beliefs and attitudes towards energy infrastructure.

2. Social acceptance of energy infrastructures: elaborating the place-based approach

Low carbon energy projects (e.g. wind farms) and associated infrastructure (e.g. high voltage power lines) generate significant environmental, social and economic impacts. This has led to strong community opposition (Wustenhagen et al., 2007) that is often termed ‘NIMBYism’ (Not In My Back Yard; Dear, 1992). Over the past 15 years, the NIMBY concept has been strongly critiqued as an appropriate way to describe and explain local responses to proposals for siting energy projects (e.g. Devine-Wright, 2005; Wolsink, 2006; McClymont and O’Hare, 2008; Bell et al., 2013). Several pathways of subsequent research can be identified that recognize the importance of different types of factor upon acceptance (see also Devine-Wright, 2008, 2013). Personal factors include individuals’ socio-demographic characteristics such as age and gender, as well as underlying political, social and environmental beliefs and values such as political orientation and attitudes towards climate change (e.g. Firestone, Kempton and Krueger, 2009; Swofford and Slattery, 2010). Project-related factors include levels of trust in the organization instigating development (Midden and Huijts, 2009); procedural justice in the way decisions are taken (Gross, 2007) and distributional justice in the ways that costs and benefits are allocated between actors (Walker, Cass and Devine-Wright, 2010). Finally, a place-based pathway focuses upon the location in which energy projects are sited, in particular local residents’ emotional attachments to this place, as well as how the meanings associated with the place and the technology proposals are interpreted to ‘fit’ together (or not) (see Vorkinn and Riese, 2001; McLachlan, 2009; Devine-Wright, 2009). This study aims to inform this latter pathway.

Place is a key concept in human geography and cognate disciplines such as environmental psychology and sociology, land-use planning and architecture (Cresswell, 2003) and can be understood as a location that holds meaning for an individual or group (Tuan, 1977). How people relate to a particular place is informed by two distinct yet inter-related concepts (Hernandez et al., 2007): place attachment (Altman

and Low, 1992) and place identity (Proshansky et al., 1983). Place attachments are emotional bonds with a place – as Rubinstein and Parmelee suggest: ‘Attachment to place is a set of feelings about a geographic location that emotionally binds a person to that place as a function of its role as a setting for experience’ (1992:139). Place identity refers to the ways in which physical and symbolic attributes of certain locations contribute to an individual or group’s sense of identity (Proshansky et al., 1983). Research has suggested that people-place bonds are typically unconscious until rendered salient, for example by changes to a place or relocation from one place to another (Brown and Perkins, 1992; Giuliani, 2003).

Numerous studies have shown the relevance of people-place bonds for explaining acceptance of low carbon energy projects and associated infrastructure, including hydro-electricity (Vorkinn and Riese, 2001); offshore wind energy (Devine-Wright and Howes, 2010); wave energy (McLachlan, 2009); tidal energy (Devine-Wright, 2011a,b); nuclear power (Venables et al., 2012) and power lines (Devine-Wright, 2013). A consistent finding is that when proposals are interpreted as a threat to a place (e.g. when projects are interpreted to ‘industrialise’ rural landscapes hitherto perceived as ‘natural’), then local residents who are strongly attached to the place are more likely to object (Vorkinn and Riese, 2000; Woods, 2005; McLachlan, 2009; Devine-Wright and Howes, 2010). By contrast, when proposals are interpreted to maintain or positively promote place character, then local residents with strong place attachments are likely to hold supportive attitudes (e.g. Devine-Wright, 2011a, Devine-Wright, 2011b; Venables et al., 2012). For example, a study of local responses to a tidal energy project in Northern Ireland showed that residents with higher levels of attachment to two nearby villages were more likely to support the tidal project, associated with the belief that the project fostered local distinctiveness by ‘putting them on the map worldwide’ (Devine-Wright, 2011a, Devine-Wright, 2011b).

Although these studies provide insight, they are limited by a ‘localist’ focus upon connections with the place where a project is sited. Whilst this is undoubtedly relevant, it is based upon two questionable assumptions. First, it presumes that energy infrastructure projects are *only* local in character. Second, it presumes that local places are the *only* places that people value and form relations of belonging with. Both of these assumptions are challenged below.

2.1. The spatial character of low carbon energy infrastructure

Low carbon energy infrastructures are *not just local* projects. Whilst having obvious local materiality and impact, they implicate relationships and concerns at multiple spatial scales, notably the national and the global (Bridge et al., 2013; Batel and Devine-Wright, 2015). In terms of ‘need’, the primary rationale for transitioning from fossil-fuel to low carbon energy is to mitigate the impacts of a global scale environmental problem – climate change. In terms of ownership, projects may be state-led, or proposed by multinational companies with little if any connection to the locality where they are constructed, and may be supported (as well as objected to) by networks of objectors that include both local and non-local actors (Gilmartin, 2008). In terms of discourse, infrastructure projects are often framed by governments as ‘nationally significant’ and decided upon at a national rather than local level. For example, in the UK, under the terms of recent legislation (the 2008 Planning Act and the 2011 Localism Act), solar farms over 50 MW are decided upon by national government; by contrast, decisions on smaller scale energy projects are taken by local municipalities.

These have implications for discourses of objection. Haggett (2008) argued that wind energy projects lead to a disjuncture between (local) cost and (national and global) benefits. Ellis et al. (2007) identified several support and objector discourses in a study of responses to a proposed offshore wind farm, including ‘rationalising globally, sacrificing locally’, a discourse that proposed action on (global) climate change and a willingness to sacrifice (local) views. A study of

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