



Original research article

Community energies: Exploring the socio-political spatiality of energy transitions through the Clean Energy for Eternity campaign in New South Wales Australia

Douglas Hill*, Sean Connelly

Department of Geography, University of Otago, New Zealand



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ABSTRACT

This paper analyses the spatial and scalar dynamics of a community-based campaign called Clean Energy for Eternity (CEFE), which has successfully promoted the use of solar and wind power on the far south coast of New South Wales (NSW), Australia. In this article we deploy three different approaches to understanding the role of scale; namely locational, relational and strategic rescaling. For the past decade, multi-scalar interventions by CEFE have provided a platform for community energy generation projects, facilitated by the development of social infrastructure that engendered new ideas, interactions and potentials, engagement and participation. These interventions have transformed the region's multiple, multi-scalar geographies of community engagement, energy use and climate change. Analysing CEFE assists in thinking about the relational aspects of energy demand, supply and use, as well as the spatiality of political mobilisation. As a grassroots movement that subsequently tried to scale up and out its activities, CEFE also alerts us to the relational nature of both barriers and opportunities for any transition towards a low carbon economy. Perhaps most significantly, the example of CEFE demonstrates how existing notions of the geographies of energy in Australia can be challenged and transformed.

1. Introduction

This paper analyses the spatial and scalar dynamics of a community-based campaign called Clean Energy for Eternity (CEFE), which for the past decade has successfully promoted the use of solar and wind power, particularly on public buildings on the far south coast of New South Wales (NSW). In doing so, it has reframed existing notions of the geographies of energy in Australia, challenging and transforming previous notions of 'energy from somewhere' to a locally engaged 'energy from here' by solidifying connections between community engagement, energy use and climate change. From its initial geographic origins in the small town of Tathra,¹ CEFE's subsequent activities provide an entry point into thinking about both the relational aspects of energy demand, supply and use, as well as the spatiality of political mobilisation. Its innovative use of political symbolism to refashion everyday spaces into sites of activism, such as the use of thousands of volunteers in the formation of human signs bearing climate change messages has been an

extremely effective engagement in the politics of place.

The success of CEFE's activities over the past decade has translated into relational engagements at a variety of scales, including the individual (by fostering household level change around efficiency); the community (such as the installation of solar panels on community buildings, resources for community organisations like rural fire services and surf lifesavings clubs); and institutional (by altering the processes around local government energy planning). The linkages forged across these multi-scalar interventions were facilitated by the development of social infrastructure that generated new ideas, interactions and potentials, engagement and participation – all of which provided a platform for community energy. As a grassroots movement that subsequently tried to scale up and out its activities, CEFE also alerts us to the relational nature of both barriers and opportunities for any transition towards a low carbon economy. The process of transition is critical, as it is the interplay of agency and structure, power, contingency and practice that shape both energy norms and behaviours [1]. Until recently, there

* Corresponding author.

E-mail addresses: dph@geography.otago.ac.nz (D. Hill), sean.connelly@otago.ac.nz (S. Connelly).

¹ Tathra is a coastal town of around 1500 people that predominantly acts as a satellite to the town of Bega as well as a holiday destination, especially during the summer period. It is overwhelmingly dominated by white, English speaking residents, who are employed in professions and trade related occupations. See <http://tathra.localstats.com.au/demographics/nsw/south-coast/south-coast/tathra> The Bega Valley shire is an area on the far south coast of New South Wales (NSW). This region is comparatively isolated and characterised by greater than average under-employment. Median household income in this shire (A\$986 per week) is considerably lower than the average for the state of NSW as a whole (A\$1486). See http://www.censusdata.abs.gov.au/census_services/getproduct/census/2016/quickstat/LGA10550

has been little attention to the construction of spaces in which these transitions occur. Bridge et al. [2] illustrate the ways that the spatial patterns of the economic and social activities shape, and are shaped by efforts to transition to low-carbon energy. It suggests that energy researchers and activists need to engage with multiple multi-scalar geographies beyond just physical supply to incorporate a more nuanced politics of low carbon energy transitions that includes the social and cultural components of energy demand, supply and use.

One way of understanding energy transitions is through the concept of scale. The role and meaning of scale is much debated in geography (and beyond) (e.g. [3–5]). Our purpose here is not to engage directly in this debate, but rather to highlight how scale might be used as an analytical concept to provide insights for understanding opportunities and limitations of community energy in place. Instead, in order to understand the energy transition in CEFE, we assert the need to understand how scale was used by a range of actors to mobilize action and cultural change about the meaning of energy supply and use. As Bridge et al. [2] discuss, the spatial organisation of energy systems and the distribution of impacts that transitions have internally and externally (both within and between particular places) are inherently geographical. While there are a myriad of ways that scale can be deployed, we identify scale as location, scale as relational and scale as strategy as useful for understanding the CEFE experience.

2. Locational scale as a site of intervention

The geographical location and setting of energy is shaped by the spatial distribution and diffusion of norms, behaviours and technologies of energy systems across space. The most obvious way that scale is invoked with regards to energy transition is based on the site of intervention. Energy transitions are often conceived of having multiple sites for intervention, from global (such as through global climate change agreements) through to the individual scale (such as sustainable consumption). Different sites of intervention highlight different roles for actors and make assumptions about who should be involved and how energy transition might be governed.

For example, evidence suggests that large-scale, state-led technological innovation is critical for leading a sustainable energy transition, but they need related regulatory changes and support from non-state actors [6]. Similarly, Chu and Majumdar [7] highlight the important role of national interventions in a sustainable energy future. Such national-level policy interventions are often perceived to be linear in terms of cause and effect and are thus easier to measure (Bergman et al., 2010). Debate exists over which policy instruments are most effective to drive transition towards more sustainable energy sources, but the assumption is that efforts such as carbon taxes, tradable energy permits and feed-in-tariffs can spur technological innovation that will eventually crowd out fossil fuel energy sources at all scales [8].

Other commentators highlight the potential of small scale, decentralized and community-owned renewable energy as part of a sustainable energy future [9]. There is not space to outline the range and scope of these small-scale community energy transitions here. However, examples such as the island community of Samsø, Denmark that transformed their energy system from coal to renewable energy [10] and Middelgrunden, Denmark, who installed an off-shore wind development jointly owned by the local municipality and local cooperative members [11] demonstrate this potential. In both cases, a more comprehensive view of energy addressed local needs and sensitivities about energy production and consumption at the local scale. Often, as Fudge et al. [12] discuss in the context of energy transition in the UK, local authorities play a critical role in shifting political, social and technological approaches to policy, design and implementation of local renewable initiatives. Here, local authorities, community groups and NGOs are the key actors that initiate and drive adoption of sustainable energy solutions that have the potential to unsettle how energy transition is perceived at other scales.

At the level of the individual, emphasis has been placed on education and awareness raising to promote the adoption of more sustainable energy behaviour and energy conservation. Programs include labelling and energy certification of products, public service announcements on energy conservation and raising awareness of the value of investments in alternative technologies for personal use [13–15]. Unfortunately, such approaches have been largely ineffective [16,17], in large part because of the continued reliance on assumptions about ‘rational’ economic actors without reference to broader social contexts.

In such debates, engagement with scale is focused to the most appropriate site at which intervention occurs. However, an exclusively locational focus fails to account for the manner in which the inter-relationships among scales are fixed, unfixed and re-fixed by particular social actors pursuing specific sustainable energy outcomes. For example, Owens and Driffill (2008) highlight how education deficit models for shifting energy consumption often fail to take into account the physical, social, institutional and cultural contexts that constrain behaviour [18]. Thus, while we need to consider the sites of these scalar interventions, there are also a range of other factors to consider as well.

3. Scale as relational: a systems approach

Energy research that adopts a socio-technical systems approach moves beyond scale as locational by explicitly acknowledging the multiple ways that technology shapes and is shaped by society. For example, Barry (2002) highlights how energy systems are a product of relationships between technology, politics and political participation across scales [19]. The technology of energy production and use frame and shape practices, norms and institutions that in turn place boundaries around what is open for debate in public participation settings. Therefore, governance arrangements and the politics of energy can only be understood through the power relations across scales from the global to the individual that together define the rules under which energy transition can occur, the actors involved and the roles they play. In essence, to understand the politics of energy transition, we need to also consider how governing practices shape debate about energy alternatives.

Similarly, Shove [20] identifies the need to address the “systems of provision” – the norms, values, practices, institutions and power that shape individual attitudes, behaviours and choices. Questions about politics, power, the role of the state, who is responsible and defining what is feasible all need to be addressed as the policy process “is incapable of conceptualizing transformation in the fabric of daily life on the scale and at the rate required” ([20], p. 1283). From this perspective, the way we think of energy is subject to path-dependence, where existing norms, beliefs and practices “lock in” options due to complex systems tied to the status quo for energy production, supply and consumption. To break out of these system requires significant changes to the large-scale technical networks which are also reinforced by existing mechanisms of governance and policy [21].

Loorbach [22] and Kemp et al. [23] provides a useful framework for understanding multi-level transition management that explicitly embraces the relational elements of scale. Transition is understood to incorporate the recursive relations between different actors at different levels across space and time through activities at strategic, operational and tactical levels. Each level represents different priorities and scope, but taken together, they inform the process of transition management. At the strategic level, activities are focused on cultural and abstract societal systems, including long-term visions, values and goals that guide transition. The tactical level refers to medium-term activities that are interest driven and that shape structures and institutional regimes, rules and regulations that govern how actors engage with each other in the process of transition. Finally, the operational level refers to short-term experiments and actions that lead to new innovations and practices that guide transition management. Together, these levels form the arena where transition occurs. Explicitly acknowledging scalar relations

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