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Understanding energy-related regimes: A participatory approach from central Australia



Tira Foran^{a,*}, David Fleming^a, Bruno Spandonide^b, Rachel Williams^a, Digby Race^c

^a Adaptive Social and Economic Systems, CSIRO Land and Water, Canberra, Australia

^b Ninti One Limited, Alice Springs, Australia

^c Fenner School of Environment and Society, Australian National University, Australia

HIGHLIGHTS

- Energy-related activities and regimes frustrate pro-sustainability action.
- Participatory workshops increased understanding of activities and regimes.
- Workshops used a novel combination of governance and social theories.
- Results justify inclusive dialogue around building energy standards and transport options.

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ABSTRACT

For a particular community, what energy-related innovations constitute no-regrets strategies? We present a methodology to understand how alternative energy consuming activities and policy regimes impact on current and future liveability of socio-culturally diverse communities facing climate change. Our methodology augments the energy policy literature by harnessing three concepts (collaborative governance, innovation and political economic regime of provisioning) to support dialogue around changing energy-related activities. We convened workshops in Alice Springs, Australia to build capability to identify no-regrets energy-related housing or transport activities and strategies. In preparation, we interviewed policy actors and constructed three new housing-related future scenarios. After discussing the scenarios, policy and research actors prioritised five socio-technical activities or strategies. Evaluations indicate participants enjoyed opportunities given by the methodology to have focussed discussions about activities and innovation, while requesting more socially nuanced scenario storylines. We discuss implications for theory and technique development.

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1. Introduction

Suites of actions at multiple levels are required to transform energy systems to meet equity, efficiency, and pollution objectives (Pacala and Socolow, 2004; GEA Writing Team et al., 2012). Community-level energy initiatives contribute meaningfully to such portfolios (Mulgetta et al., 2010; Roorda et al., 2012; Ramaswami, 2013; Ryan, 2013). By identifying courses of action that may be socially acceptable, and robust to a variety of plausible changes in energy and social policy at higher levels of governance, scenario methodologies have proven useful in option development (Kok et al., 2007; Næss and Vogel, 2012; Ramaswami et al., 2012; Foran et al., 2013).

One approach to developing multi-faceted energy scenarios is to describe alternative patterns of socio-technical change, drawing on concepts such as transition management and the multilevel perspective on systems of provision (Verbong and Geels, 2007; Foxon et al., 2010; Verbong and Geels, 2010). For instance, the *Transition Pathways to a Low Carbon Economy* project developed three scenarios by which the UK could reduce its greenhouse gas emissions 80% by 2050. A contrasting policy paradigm (market, government, or civil society) informed each scenario and associated modelling (Foxon, 2013). Such whole-of-system, technically oriented scenarios can inform at national-level policy making. However, to support participatory action research on energy systems in specific places, refinements to method are needed. For example, the UK *Thousand Flowers* scenario is based on a homogenous “civil society” policy paradigm (Foxon, 2013), in which citizens, not market or government actors, play a leading role in decisions related to energy systems. Such a scenario however

* Correspondence to: Adaptive Social and Economic Sciences Program, CSIRO Land and Water, GPO Box 1700, Canberra ACT 2601, Australia.
Tel.: +61 2 6246 4308, Mob.: +61 448 539 051.

E-mail address: tira.foran@csiro.au (T. Foran).

Table 1
Types of innovation. Source: Authors, adapted from Seyfang (2009).

	Market-based innovation	Grassroots innovation
Context	Market economy	Social economy
Driving force	Above-market economic returns obtained from possession of an innovation	Various interpretations of social need and affordable functionality
Organisational form	Firms	Very diverse (informal groups, networks, associations)
Resource base	Commercial income	Diverse (grants, voluntary inputs, mutual exchanges, commercial income)

raises questions about how energy-related policies and activities impact on citizens who *differ* with respect to race, cultural values, livelihood aspirations and economic capability (cf. Shove and Walker, 2007). A growing literature exists on methods to facilitate urban sustainability transitions (Vergragt and Brown, 2010; Rooda et al., 2012; Nevens et al., 2013; Ryan, 2013), however issues related to socio-cultural difference do not feature prominently in this literature (cf. Wittmayer et al., 2014).

This paper augments the energy transitions literature by proposing a methodology, informed by critical social science, to assist multi-stakeholder dialogue around energy activities, policies and change. The methodology flows from interest in developing collaborative ways of understanding how alternative energy-related activities and systems impact on the current and future liveability of selected local communities. We use Alice Springs in central Australia, as a case study. Drawing on concepts of grassroots innovation (Seyfang, 2009; Seyfang and Haxeltine, 2012) and also influenced by social practice theory (Shove, 2004; Strengers and Maller, 2011; Shove et al., 2012; Horne et al., 2013), we introduce the concept of “energy-related activity” to catalyse dialogue. To encourage actor reflection around constraints and possibilities for change, we place innovation in a conceptual framework that draws on political economy and collaborative governance. To help assess possibilities for innovation around energy-related activities, we introduce the concept “political economic regime of provisioning” (cf. Foran, 2015) (Section 2). In a collaborative process, participants debated existing energy-related innovations and additional innovations that may be feasible in remote Australia (Section 3). We discuss the methodology’s utility in energy policy development in Section 4.

2. Methods

One way to plan for energy futures is to explicitly reflect on what could happen to people and communities under alternative scenarios, taking into account uncertain future levels of factors such as policy commitment, local innovation and economic growth. Remote Australia – an area that covers 85% of the continent but comprises 5.2% of its population – is considered distant from many markets and centres of power (Stafford Smith and Cribb, 2009; Foran et al., 2014).¹ The region’s social distance puts a premium on local knowledge and technical and social innovations to address problems that mainstream approaches may fail to resolve. In this context, scenario methods can help explore the fate of a particular issue, geographic region, or policy in a number of alternative future worlds, which can be derived from a common initial scenario framework (Henrichs et al., 2010; Foran et al., 2013). Our methodology makes use of this technique: informed by

theories of collaborative governance, we used scenario techniques to explore the fate of innovative energy-related activities in alternative political economic regimes of provisioning.

2.1. Innovation and energy-related activity

By energy-related “activity” we mean a type of action, mediated by use of particular technologies and associated infrastructure, whose status is typically accepted as normal in a particular place and time, or otherwise institutionalized. Such activities are important for energy studies because they involve particular material designs, configurations, and technologies – for example, single family, brick veneer houses in Australia with relatively low insulation (Horne and Hayles, 2008; Wang et al., 2010). Technologies embody assumptions by designers and other authorities about what users need or find appealing. In a political economic context of limited options, their absorption by users locks-in a particular technology, with consequences for energy demand.

Our concept of energy-related activity has been influenced by the social practice literature. A social practice is a emergent entity that results from the integration of (i) practical knowledge (e.g. the knowledge that an architect has about what designs are commercially viable) with (ii) material infrastructures (e.g. timber, brick veneer, sealed roads, central grid-supplied electricity), underpinned by (iii) a combination of common understandings about what constitutes necessity as well as obligation (Shove, 2004; Strengers and Maller, 2011; Shove et al., 2012). Based on this literature, we conceive of energy-related activities as socially constructed and embedded in material artifacts and mental conceptions. However, departing from social practice literature – and instead consistent with literature on political economy (Section 2.2) and on collaborative governance (Section 2.3) – we work with a slightly more optimistic conception of the power of collective action to change some energy-related activities.²

By “innovation” around energy-related activity we refer to the process by which activities new to a particular social group are acquired by that group, resulting in novel outcomes (cf. World Bank, 2012). Although market-based, entrepreneurial, and technical images dominate thinking around innovation (cf. Hekkert et al., 2007; Foxon, 2013: 19), market economic logic does not govern provisioning of all goods and services. Grassroots innovation (Seyfang, 2009) involves voluntary exchanges of labour, knowledge and services, often centred on a particular community of place, in whose economic and social wellbeing residents choose to invest. In this concept, profit is not primarily appropriated by private actors but “reinvested into the grassroots” (Seyfang, 2009: 63–82; Foran et al., 2014) (Table 1). The value of innovations can be evaluated according to indicators of sustainable consumption, such as: adopting lower carbon lifestyles; local provisioning of

¹ Remoteness in Australia is typically defined based on road distance to service centres with different levels of population (Australian Population and Migration Research Centre, 2015). 2.5% of Australia’s population is indigenous (548,365 persons in 2011); 25.6% of the indigenous population lived in remote regions in 2011 (Australian Bureau of Statistics (ABS), 2013a).

² Social practice theory is sceptical about the transformative potential of human agency (Sayer, 2013): our departure from its conceptualization of agency is motivated by an interest in participatory and deliberative approaches to formulating energy policy.

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