



Original research article

Can local government play a greater role for community renewable energy? A case study from Australia



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ABSTRACT

Despite unsupportive political conditions for renewable energy (RE) in Australia, a new movement is emerging. About 70 Australian community groups have started to embrace the concept of community renewable energy (CRE) and develop their own projects. However, faced with a complex institutional environment and the absence of national government support, only a few groups have established operating CRE projects as yet. In this situation the role of local government (LG) 'closest to the people' deserves more attention. By presenting empirical evidence from an Australia-wide survey and a number of semi-structured interviews, we identify motivations, barriers and opportunities of LGs in RE deployment, giving special attention to the role LGs in enabling CRE initiatives. Our survey finds that RE generation by LGs has become a widespread budget relevant activity. The majority of LGs have yet to recognise the social benefits associated with a community collaboration in the field of RE. However perceived financial and regulatory barriers limit the scope of action for LGs and their communities, and higher-level government support is essential. The Australian experience is relevant to other countries with similar political and institutional barriers.

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1. Introduction

There is a growing consensus among policy makers and academics that bottom-up initiatives play an important role in the development of renewable energy (RE) and in wider citizen engagement in sustainable living [50,38,68,48,91]. Local action on energy can refer to institutional approaches, e.g. by local governments (LGs, otherwise referred to as 'councils'), as well as grassroots driven approaches, both of which give emphasis to a broadening role of non-nation state actors in energy deployment.

Empirical evidence suggests that local initiatives have contributed significantly to energy resource diversification and have influenced energy policy in countries such as Denmark, Germany and UK since the 1980s. Most notably, almost half of Germany's RE capacity is owned by individuals and local or regional community groups and more than 900 energy cooperatives had been established by the end of 2014 [90,6,100]. One of the key characteristics

of energy cooperatives in Germany is a close collaboration between LGs and other local actors [34,6].

Locally-led RE initiatives are increasingly analysed through the concept of community renewable energy (CRE) [99,98,97,94,52,83,40,43,14,84,100,17,62,80]. This concept spans a great variety of projects for RE production and consumption that in essence are initiated, owned and managed by communities of locality or interest [97]. CRE has numerous environmental and socio-economic benefits (Roger et al., 2008; [116,64,44,69,32,100]) and holds the potential to enable a higher degree of community engagement in processes of co-creating a RE system, which makes this emerging field interesting to academics researching social change processes [48,63]. Hence, analysis in this field has gained relevance to address key questions about appropriate forms of energy governance and shaping energy policy [86]. Despite the growing body of literature around some aspects of CRE, there is still limited academic research on CRE in relation to the role that institutional actors such as LGs can play to encourage local RE uptake [75,126,128], particularly in an Australian context [47,53]. In Australia community ownership of RE is a relatively new model attracting a fast growing interest from community groups and other stakeholders. In the country's context CRE projects are defined as social or community RE enterprises, driven by local

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people, who tend to have a social and environmental motivation, as well as an economic one. Similar to the international counterparts, they can encompass a range of technologies and activities across a breadth of scales, determined by the community needs; availability of local natural resources, technologies and funding; and community support [25]. However, unlike the situation in Denmark and Germany, citizen enthusiasm for CRE meets a rather unsupportive and changeable national policy environment for RE [22,72,12,25], making it difficult for local groups to set up projects. Thus the situation in Australia can be considered to be a case study for building CRE in developed countries where there are high political barriers to RE. The sources of these barriers may include: a powerful fossil fuel industry [73,74] a centralised grid, where distributed systems and bottom-up initiatives have great difficulties to compete, economically as well as politically; privately owned electricity utilities whose business models are threatened by the growth of RE and of a greater actor diversity. Additionally those political barriers are situated in a media environment that is dominated by climate science scepticism and hampering discussion about solutions [15,16]. These and other barriers to RE can be considered to be the result of 'carbon lock-in', a technological and institutional co-evolution that creates persistent market and policy failures that can inhibit the diffusion of carbon-saving technologies, through a variety of systemic processes, despite their many advantages [92].

Empirical and theoretical studies emphasise the importance of local alliances for overcoming barriers to CRE [64,19,40]. This suggests that Australian LGs have the potential to play a large role in CRE development [107].

LGs in Australia have been involved in energy-related activities in many ways over the past century: owning half the first power stations in the early 20th century [20,21] running energy efficiency programs from the 2000s [10,11,29,71] and growing interest in small-scale (1–10 kW) generation,¹ such as solar PV, in the last five years [101,102]. However, despite the heavy involvement of their counterparts in Germany or the UK, LGs in Australia are not currently active in leading bottom-up transitions to RE.

How can this lack of active engagement in RE deployment on the part of LGs in Australia be explained? What are the barriers for local authorities to engage more in RE beyond small-scale (>10 kW) generation? What role could LGs play in supporting and partnering with communities in an environment where national and state government are at best weakly supportive of RE?

The aim of the paper is to shed light on these questions and, more broadly, to reveal challenges and strategies of locally led RE initiatives by using the Australian example as a case study.

This article reports on a national survey of the role and contribution (actual and potential) of LGs in Australia as actors in 'bottom-up' RE uptake and CRE in particular. Specific attention is given to analysing the challenges and opportunities presented by LG in RE deployment and engaging their communities. Empirical data is discussed against the wider energy policy context in order to identify the prospective role for collaborations between LG and community groups to contribute to RE uptake in Australia.

The article is structured into five sections. Section 2 provides a brief literature review of the different roles of LG in RE deployment. Section 3 introduces the research methods applied in the study. Section 4 gives a brief introduction to the Australian context of RE deployment and policy. Section 5 outlines the results of our national

survey of LGs. Section 6 discusses the results and their implications in a national and international context and concludes the article.

2. Role of local government in renewable energy

In recent decades the role of LGs and non-state actors to address socio-environmental challenges has advanced considerably [23,49,46]. In particular, following recognition by the United Nations Agenda 21 in June 1992, local authorities across the world have taken extensive action on environmental issues such as protection of the climate and natural resources [30,81,18,46]. Their potential as a catalyst for change through community engagement has gained increasing attention and recognition by academics and governments alike [38].

International and national initiatives such as the International Council for Local Environmental Initiatives (ICLEI), the European Sustainable Cities and Towns Campaign (1994–2013), the European Aalborg Process and national programs such as a the Sustainable Community Projects in the UK (Smith et al., 1999) have assisted LGs to address environmental problems in their communities and help to exchange and share experience with other LGs.

Different authors emphasise the local level governance approach in contrast to top-down measures, arguing that the 'government closest to the people' is considered to be better placed to facilitate between citizens' interests and national policy targets [50,38,82,85]. One of the key arenas of LG sustainability initiatives has been energy-related activities. Despite the fact that energy policy and regulation has traditionally been the domain of national and/or state/provincial governments due to the centralised electricity system in many Western countries, LGs have found niche remits through which to take action on energy issues. Hence, LGs have become active in areas where they are able to have primary decision-making powers, such as energy efficiency, fuel sourcing or demonstration projects for RE [23,24,18]. Hence those measures of *self-governing* have become common modes of LG action in RE. Yet, Bulkeley and Kern [24] further identified the 'enabling mode of governing' from LGs in the UK and Germany as a strategy to enable and facilitate local actors to pursue energy-related purposes. Other authors highlight LGs' role in promoting behaviour change and raising awareness of climate change and energy consumption, as well as their ability to encourage effective community engagement by acting as a 'role models' and leading by example in energy matters [38,75].

The 'Aachener Modell' is an example of LGs' influence on national policy-making, as it served as a blue print of the highly successful feed-in tariffs in Germany. They were initiated by several community groups and implemented by the local municipal utility following a council decision of the city of Aachen in 1993 (Jacobsson and Lauber, 2006; [114,6]).

The rise of grassroots initiatives in RE over the last decade indicates increased opportunities for LG in community engagement. For example, in Germany collaborations between energy cooperatives and LGs are quite common. According to empirical data from the German Cooperative Association (DGRV), more than two-thirds of energy cooperatives have installed solar PV or wind turbines on rooftop space or property of their LG; LGs are members in 60% of energy cooperatives and every second energy cooperative in Germany was jointly initiated with a LG [34].²

A similar picture was observed for the UK. Seyfang et al. [127] identified supportive partnerships as a success factor for CRE

¹ In this paper we refer to small-scale generation in two different definitions: firstly to the most widespread use of solar PV, which generally occurs in the range between 1 to 10 kW and secondly, in Section 4, to a policy definition of 'small-scale' generation in the range of 1 to 100 kW. For the latter use we place quotation marks around 'small-scale'.

² LG membership doesn't necessarily mean that LG has directly invested into the cooperative's RE assets. It can mean other forms of involvement, including offering LG rooftop space, administrative support or a representation as an office bearer or observer in the cooperative's governance and/or activities.

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