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The establishment of citizen power plants in Austria: A process of empowerment?



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ABSTRACT

This paper looks at citizen power plants in Austria – wind farms and photovoltaics plants jointly owned and operated by groups of citizens – and asks whether their establishment can be interpreted as a process of empowerment. To this end I draw on resource-based notions of power, understanding empowerment as the increase of disadvantaged actors' ability to mobilize and use resources for their goals. I argue that the establishment of citizen power plants constitutes a process of successive resource mobilization in which bottom-up actors have been able to access an increasing amount of resources. At first sight this suggests that the establishment of citizen power plants in Austria indeed constitutes a process of empowerment. However, I also discuss three qualifications to such an interpretation. Firstly, the modulation of ends to which resources are put (assimilation and incorporation to established structures); secondly, the persistence of dependency relations for resource access; and thirdly, a bias of citizen power plant initiatives toward already better-resourced individuals and communities.

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1. Introduction

With rising concerns over ecological sustainability as well as security of supply, energy systems are experiencing increasing pressure to change, and various efforts have been made to transform them into more sustainable forms. Efforts to build up low carbon energy systems have not only been made by policy, research and industry actors, but have, at the grassroots level, also included the establishment of citizen power plants—wind farms or photovoltaics plants jointly owned and operated by groups of citizens, typically living in the town or region where the plant is set up.

Since the 1990s, citizen power plants have been on the rise in several European countries (see e.g. [47–49]), most notably in Germany, where 34.4% of installed renewable energy capacity is owned by local and regional citizens [1]. In Austria, citizen power plants had an important role to play in pioneering wind power deployment in the second half of the 1990s [2]. Since around 2010 citizen power plants in Austria have also spread in the area of photovoltaics (PV).

The establishment of citizen power plants is sometimes viewed as a form of empowerment, giving bottom-up initiatives control over energy infrastructures and channeling revenues to local com-

munities rather than to international corporations. For example, Flieger [3] looks toward energy cooperatives as a promising example of consumer empowerment in the energy sector, allowing for comprehensive forms of participation. Along a similar line, Heiskanen et al. [4] have argued that collective action in communities striving for CO₂ reduction can help overcome social dilemmas and feelings of helplessness experienced by individuals.

However, other authors have pointed out that citizen-led renewable energy projects often find themselves marginalized by more powerful actors. For example, Hinshelwood [5] notes that external organizations offering support to such projects may easily impose their agenda on the local community, leading to a loss of local control. Similarly, Hess [6] argues that bottom-up initiatives in the US promoting distributed solar energy have been sidelined by incumbent actors who have adapted and incorporated decentralized forms of energy generation.

How can such strongly differing perspectives be explained? What appears to be missing is an empirically and theoretically grounded analysis of the potentials and limits of citizen power plants in terms of their contribution to processes of empowerment. This paper attempts to fill this gap by examining to what extent the establishment of citizen power plants in Austria constitutes a process of empowerment and what challenges arise in this context.

The following section introduces the conceptual approach, presenting an understanding citizen power plants as sociotechnical configurations and outlining a resource-based understanding of

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power and empowerment. Section 3 presents an overview of the data and methods used and Section 4 provides an introduction to citizen power plants in Austria. Results are presented in Section 5. Although bottom-up actors have been able to mobilize an increasing amount of resources for the development of citizen power plants, I also identify three issues that limit the extent to which this can be interpreted as a process of empowerment: a modulation of ends to which resources are put (assimilation and incorporation to established structures), continued dependency relations for resource access, and a bias of citizen power plant initiatives toward already better-resourced individuals and communities. The subsequent discussion further analyses these critical issues in relation to my conceptual approach. A concluding section comments on the implications of the findings.

2. Conceptual approach

2.1. Citizen power plants as alternative sociotechnical configurations

Efforts to transform energy systems to more sustainable forms involve a broad range of actors from the spheres of policy, research, business and civil society. Indeed, Seyfang and Smith [7] have drawn attention to the innovative potential of bottom-up initiatives in transition processes oriented toward sustainability. They coined the notion of grassroots innovations, understood as “networks of activists and organizations generating novel bottom-up solutions for sustainable development.” [7:585]. Such grassroots innovations operate in the sphere of civil society and experiment with technologies as well as social innovations [7]. Citizen power plants, renewable energy installations owned and operated by groups of – often local – citizens, constitute a specific form of grassroots innovation in the energy sector.

The notion of grassroots innovations builds on a conception of innovation as sociotechnical [7]. It not only involves the introduction of new technologies, but also a realignment of social relations and institutions. The notion of the sociotechnical pays reference to the closely intertwined relationship between technical and social as well as institutional elements related to a particular technology [8]. Indeed, transformation processes in energy systems not only include changes in its fuel base as well as energy generation and infrastructure technologies. Rather, they also involve comprehensive changes in socio-economic arrangements and a redefinition of the roles of different actors [9]. The concept of a sociotechnical configuration refers to purposefully aligned sets of such social and technical elements to fulfill societal functions [10,11]. Grassroots innovations, in particular citizen power plants, can therefore be understood as new sociotechnical configurations developed by civil society actors.

Walker and Cass [12] have used the concept of sociotechnical configurations specifically to look at opportunities for public participation implicated in different possible implementations of renewable energy technologies. In particular, they look at the technical hardware involved (energy generation technologies), infrastructural arrangements (e.g. grid integration or off-grid solutions), forms of ownership (e.g. public/private, individual/collective), forms of management (e.g. public/private, participative/hierarchical), as well as the function and service the generated energy is used for (e.g. warmth/mobility, local or distant consumption). For the purpose of this paper, the notion of sociotechnical configurations and the dimensions identified by Walker and Cass in relation to renewable energy installations will serve to discuss the transformative potential of citizen power plants in relation to established configurations in the energy system (Sections 4 and 5.2).

2.2. Conceptualizing power and empowerment

Power relations implicated in energy system transitions have recently attracted an increasing amount of attention [13–15]. As far as grassroots innovations such as citizen power plants are concerned, two contrasting perspectives can be discerned: grassroots innovators as powerless actors who are easily suppressed by established actors [16–18]; and grassroots innovations as a means of empowerment, creating leverage by providing platforms for collective action [4,7,19].

These two contrasting perspectives on power in relation to grassroots innovations in fact mirror some longstanding themes in the conceptualization of power. Thinking of grassroots innovations as a means of empowerment reflects concepts of power that emphasize the productiveness of power. Power is what allows a plurality of actors to do something and thereby to make a difference in the world [20]. Furthermore, thinking of grassroots innovations as a means to exercise power implicitly understands power as distributed: power is not only held by a small elite but results from purposive collective action of many individuals [20]. Conversely, looking toward grassroots innovators as comparatively powerless actors vis-à-vis incumbents points toward power as an obstructive, constraining and potentially even oppressive force. In particular, the power of incumbent actors sets barriers to the agency of others. Looking at grassroots innovations in this way suggests conceptions of power as concentrated in the hands of a limited number of ‘powerholders’, or as an amorphously omnipresent force [21].

Avelino and Rotmans have developed a conceptualization of power specifically for the analysis of sustainability oriented transition processes [22,23]. They draw on conceptions of power that understand it in terms of resources that actors have at their disposal [24]. In particular, they understand power as “the ability of actors to mobilize resources to realize a certain goal” [23:550]. Such resource-based conceptions of power both allow to understand power as potentially distributed, albeit not evenly distributed. A broad range of actors are able to mobilize certain resources, but of course not all actors will be able to mobilize the same amount or the same type of resources. This is also in line with Andy Stirling’s suggestion to look toward power in energy system transformations as asymmetrically structured agency [15:84].

Furthermore, resources are something that is put to use to achieve a certain goal. This highlights the productiveness of power which may, however, be re-productive (reinforcive power) or transformative (transformative power) [22:72/73]. Reinforcive power reproduces established forms of action while potentially constraining others. Transformative power produces new forms of action while potentially disabling established ones [24].

Arguably, actors are in a disadvantaged position if they have access to comparatively few resources and if they strongly and unilaterally depend on others for resource access, especially if those actors have goals that are in conflict with theirs. Actors are in a privileged position in terms of power relations if they have access to a comparatively large amount of resources and they are not dependent on other actors for resource access, especially not unilaterally dependent. Furthermore, empowerment can be understood as the increase of disadvantaged actors’ ability to mobilize and use resources for their goals, and the reduction of dependency relations for resource access, especially unilateral dependence on actors with differing goals [cf. 23:556/557].

Drawing on these concepts, analysing whether a group of actors has been empowered means to investigate whether their access to resources to realize their goals has increased, whether dependency relations could be reduced, and whether these actors constituted disadvantaged actors to start with. The question I address in this paper can thus be re-articulated:

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