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The adaptation of Dutch energy policy to emerging area-based energy practices☆

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ABSTRACT

This paper sheds a light on how local conditions affect renewable energy innovation. As empirical case, we study an energy transition policy regulation in the Netherlands: the zip code-rose regulation (PCR) intended for community energy initiatives. Firstly, we analyse the capacity of the PCR to facilitate the accommodation of renewable energy projects by community energy initiatives. Secondly, we analyse how emerging area-based energy practices are feeding back into the energy policy system. Based on empirical evidence from a desk study and interviews with community energy initiatives and key governance actors we find that the policy does provide a modest incentive for initiatives to develop renewable energy projects under local conditions. Nevertheless, the policy falls short of allowing initiatives to openly seek for locally desired solutions and hence, to increase opportunities at a local level to develop projects based on local conditions. However, current difficulties with the policy are being considered at a national level urging for adaptation of Dutch energy policies.

1. Introduction

A relevant policy question is how the accommodation of renewable energy installations in local communities can be facilitated. Research shows that the accommodation of renewable energy installations, such as wind turbines, bio-digesters and solar PV, can benefit from a close connection to local communities and accordance with local institutions (Nadaï and Van der Horst, 2010; Van Kann, 2015; Wiersma and Devine-Wright, 2014). In existing fossil fuel-based energy systems, the electricity system has relatively few extraction and production locations. Electricity is transformed and transported through a one-way grid to local end-consumers (Pagani and Aiello, 2012). In emerging renewable energy systems, by contrast, energy is generated on smaller scales at multiple production locations, including individual household units. While some installations are clustered in large wind parks or solar fields, many are also strongly dispersed through space (Bridge et al., 2013). For most renewables only modest amounts of electricity can be generated per installation. Hence, these installations are far greater in number of production units, while they typically require large amounts of space and are installed well visible for local communities (European Commission, 2016; Van Hoorn et al., 2010). As a consequence, developing renewable energy projects often takes places in close connection to spatial-physical conditions as well as socio-economic conditions. These include a range of local conditions such as favourable sun conditions, suitable locations for solar PV panels, a local base support network, economic opportunities, and a supportive municipality. Connecting with local conditions can be a crucial precondition for these projects being socially accepted and economically desired. Hence, this paper suggests that taking local conditions into account can be beneficial for energy transition policies.

Among the recent innovations in energy policies are attempts to adapt regulations to developing renewable energy projects on a local scale. In this paper, we target an example of such a policy innovation: the Dutch zip code-rose regulation,[1] which is hereafter discussed as the PCR policy. The PCR is intended for community energy initiatives by allowing participants in a single energy initiative to share ownership of electricity production sites for electricity among participants (Belastingdienst, 2016). The main benefit is for citizens and small entrepreneurs that have no access to production sites, such as on their own roofs. By participating in a PCR also these actors can have their own solar panels, but just on a different location. The result is a far larger degree of flexibility to include both actors with potential for electricity production (e.g. large roofs of company buildings) and those without such opportunities (e.g. those without a roof for PV panels) to

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[1] In Dutch language, the regulation is called the 'Postcoderoosregeling' (PCR).

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join forces within a project. If successful, the PCR will thus allow for the realisation of more local renewable energy projects.

In this paper, we are firstly interested in the capacity of the PCR to facilitate the accommodation of renewable energy projects by community energy initiatives. We want to know whether the PCR facilitates linking projects to people in a local context. We are, however, also interested in the impact of the PCR on the Dutch energy policy system. After all, the PCR is a novel regulation meant to increase possibilities to develop energy projects on a local scale. While working with the regulation, new practices are tried and tested that might influence existing practices and notably, the policies and regulations surrounding them. Hence, our second interest is analysing how new practices are feeding back into the energy policy system. We want to know how key governance actors are reflecting on the experiences with the PCR in practice and whether this is inducing policy changes.

In the following section, we describe the potential role of energy policy for accommodating area-based energy practices. Then we describe the methods, the PCR policy and the findings of our analysis, which are followed by some concluding remarks on how energy transition policy accommodates community energy initiatives.

2. Accommodating area-based energy practices?

The existing energy system has developed institutionally to support a stable flow of energy delivered to consumers with a high degree of certainty. An important pillar of the energy system is electricity, which is still predominantly based on fossil fuels (Eurostat, 2016). Electricity is generated at large production sites and transported over often large distances through a one-way grid from producers to local end-consumers (Pagani and Aiello, 2012). In the electricity system producers and consumers are separated. This separation is further strengthened as access to the electricity grid by individual citizens or small entrepreneurs producing excess renewable energy was heavily constrained and is only recently becoming easier. As such, the institutional development of the energy system, including a range of energy policies, regulations, taxes and contracts, tends to reinforce existing practices and needs adaptation if new energy practices are to become possible, let alone more dominant. For example, renewable energy is taxed the same as fossil fuel-based energy in the Netherlands, thus rather reinforcing existing fossil-based practices with large production installations than instigating new practices.

Due to the rise of renewables there is also a rise of new practices that coincide with a need for altered institutional developments (cf. Bridge et al., 2013; Hajer, 2011; Shove, 2010). Energy practices are ways of producing and consuming energy: “a routinized type of behaviour which consists of several elements, interconnected to one other” (Reckwitz 2002, p. 249 in: Hargreaves et al., 2013). Although the energy system is still relying on large production sites, we also see increased opportunities for citizens and small entrepreneurs to be involved. This involvement is also visible with many bottom-up initiatives being developed in which citizens and small entrepreneurs try to become prosumers or even producers themselves (Hoppe et al., 2015). Many of these energy initiatives are local in nature and based upon communities taking action (Wiersma and Devine-Wright, 2014). These initiatives create novel practices “out of discontent with, and in relation to, existing practices” (Hoffman and Loeber, 2016, p. 692). Motives for energy initiatives include an urge to foster sustainable development and to have production sites in their own vicinity. For example, solar PV panels on a rooftop or a wind turbine in a field close to a village or neighbourhood are means of developing community based initiatives for the benefits of these communities.

These bottom-up developments are leading to adaptation of existing energy policies and new energy transition policies and sometimes are also made possible by such adaptations. The opportunities that the changing institutional framework offers are varied. They include examples such as rights for Net Energy Metering[2] enabling citizens to become so-called prosumers by factoring in privately produced renewable energy on their energy consumption bill (Ramírez et al., 2017); favourable feed-in-tariffs for electricity from renewable resources (ibid.); but also investments by decentralised governments in renewable energy installations to support WIMBY (welcome in my backyard) (SER, 2017). Despite these examples, energy policies and regulations are still far away from being able to fully accommodate and foster new energy practices and, notably, bottom-up initiatives. Past experiences with energy policies in the Netherlands have shown that the pursuit of renewable energy innovations has often faced constraints due to ill-fitting regulations, institutional practices and policy incentives (Negro et al., 2012; Van Hoorn et al., 2010). Rather, the Netherlands is a good example of a nation progressing through a process of learning by doing. Involved actors actively monitor and reflect on existing and emerging energy practices. Nevertheless, adjustments remain modest so as to avoid the accommodation of new renewable energy practices to have negative disadvantages that compromise energy security, safety, fairness, spatial quality, etc. (cf. Bouzarovski and Simcock, 2017; Herbes et al., 2017; Hölsgens, 2016; Pesch et al., 2017). The result is that there are still some key issues for accommodating local community energy initiatives in the Dutch case.

Among the issues is problematic access of community initiatives to local renewable energy projects, other than through placing solar panels on the individual roofs of households (Elzenga and Schwencke, 2015; Franken, 2014). Such access is notably relevant if the initiatives include people without gardens or rooftops or demand more electricity than these can provide. Without access to sufficient space, initiatives often lack capacities to develop a business case and generate sufficient investment capital to get started. Before the PCR policy, such access was difficult. There were subsidies for larger production sites, but they were meant for larger projects of a more industrial nature (called SDE+). Similarly, there are possibilities for individual citizens to exchange electricity. Nevertheless, there was no institutional niche for small initiatives with individual citizens and small entrepreneurs to join forces with smaller and rooftop owners or land owners such as supermarkets, car dealers and farmers that had possibilities to develop excess electricity, but were often too small for becoming industrial subsidized production sites. As a consequence, many smaller community energy initiatives have difficulty to deliver projects, and often remain with one incidental local project (Elzenga and Schwencke, 2015; Franken, 2014).

Among the possible responses to the problematic access of initiatives to projects is to allow for more flexibility in sharing production and consumption on a community scale. For one, the local scale is attractive for community initiatives as they might themselves use their local network and knowledge as a strategy to activate local resources such as social capital, (crowd)funding, space or rooftops. The result is that sharing risks among locals might be a means of reducing risks and developing a more realistic business case (De Boer and Zuidema, 2016; Zuidema, 2015). Secondly, taking local conditions into account may help projects to avoid running into trouble with social resistance (Batel et al., 2013), while they might also gain access to local support and resources such as investments and consumers. In both these cases, community energy initiatives and renewable energy projects are trying to creatively activate and combine local resources: time, money, space, knowledge and the people and groups that own these or have access to them. By doing so, initiatives gradually and experimentally create their area-based energy practice.

Such area-based energy practices have potentially synergetic

[2] Net Energy Metering is an accounting procedure that allows small energy users with a renewable energy installation, such as wind turbines and solar panels, to feed back the generated electricity to the network. The electricity generated is factored into their energy bill, so only the Net consumed electricity is to be paid for. Entrepreneurs and private house owners are eligible. Through this procedure, consumers do not pay energy taxes on the consumption of electricity they have produced.