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Patterns of acceptance and non-acceptance within energy landscapes: A case study on wind energy expansion in Austria

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ABSTRACT

Wind energy is a key technology in the transition toward a low-carbon society, but acceptance is considered to be a constraining factor in achieving ambitious wind deployment targets. Based on an Austrian case study, this paper investigates eight decisive patterns of acceptance and non-acceptance of wind energy. We apply qualitative research methods, such as interviews, focus groups, and WorldCafé discussions, with stakeholders on the national level and with citizens and local decision-makers at potential wind power expansion sites. The results show that local opposition to wind energy cannot be explained by single factors but is caused by a complex set of individual and collective preferences rooted in institutional and socio-political arrangements. The problem concerning these conflicting patterns is that they are trapped in often opposing or confronting policy core beliefs, which are unlikely to change. Hence, it is necessary to appeal to overarching targets like the claims of environmental justice to counterbalance the impacts of wind energy. We conclude that there is a strong demand for fair decision-making processes and an equal distribution of environmental and economic gains and losses.*This article is part of a Virtual Special Issue entitled 'The collaborative "making" of Energy Landscapes'*.

1. Introduction

Current and future challenges of climate change and the transition toward a low-carbon society require a phasing out of fossil fuels and a concurrent expansion of renewable energy sources (Riahi et al., 2012). In the narrative of ecological modernization (Jänicke, 1997; Weidner, 2002), substantial environmental policy innovations and improvements in deploying environmentally friendly energy technologies are necessary.

Wind energy is a key technology for achieving a low-carbon society because it is one of the most cost-effective technologies in an energy system with high shares of renewables, especially in Europe (Blanco, 2009). In Germany, the UK, Poland, France, Sweden, and some Austrian regions, wind energy has experienced significant growth in recent years (The European Wind Energy Association, 2014, 2015, 2016). However, the lack of acceptance of renewable technologies and wind power constrains ambitious renewable energy deployment targets. Studies repeatedly highlight the fact that people support wind energy in general but often oppose specific wind farm projects on a local level (cf. Wolsink, 2000). The EU funded project "WindBarriers", for example, has demonstrated that "*30% of non-finalised wind farm projects in Europe are stopped due to lawsuits and public resistance*" (Azau, 2011). In addition, social sciences that address the notion of risk have demonstrated that human behavior is predominantly dependent on individual perceptions and preferences and not on objective or scientific facts (Covello, 1983; Rohrmann and Renn, 2000; Slovic, 1987). In the case of wind energy, Firestone et al. (2015), for example, assert that positive or negative impressions on wind turbines "*are more reflective of socially and culturally constructed aspects [...] than physical ones*". In addition, in their case study of Scotland and Ireland, Warren et al. (2005) have shown that aesthetic perceptions on wind farms have the most dominant influence on individual attitudes. Other studies are complementing this portfolio of influences by looking at public support for renewable energy sources, the

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implementation strategy of developers, the number of wind turbines installed, the intensity of the aerodynamic noise from rotor blades, the protection of local birds and animals, or the specific value of the landscape, familiar surroundings and the habitat (Enevoldsen and Sovacool, 2016; Firestone et al., 2015; van der Horst, 2007; Wolsink, 2000, 2007a, 2007b, 2010, 2012). Hence, local support for or resistance to wind energy cannot be explained by single factors (cf. Ellis and Ferraro, 2016).

The article frames acceptance as not only a management task and goes beyond the widely recognized normative assumption that "acceptance" is good and "resistance" is bad. It is interested in the processes for how to implement and in the reasons why not to implement a project. In line with this approach, citizens are conceptualized as active agents interested in democratic, fair and trustful decision-making processes (Gross, 2007; Langer et al., 2016; Wolsink, 2007a) and not as disturbance factors that must be convinced to follow the energy transition. Therefore, the governance of wind energy is determined by aspects advocating for and opposing wind energy (Aitken, 2010; Wolsink, 2012) and by different notions of environmental justice (Rawls, 1971, 2001).

This paper is based on two main research questions: *What are the decisive patterns of acceptance and non-acceptance in the case of wind energy? How can they be linked to claims and requirements of environmental justice?*

This article is based on the inter- and transdisciplinary project TransWind,[1] which conducted an assessment of acceptance of wind energy in Austria that focused on individual and societal indicators, perceptions and preferences (Scherhaufer et al., 2016b). Austria is an interesting case because the technical and economical deployment of wind energy is not only restricted to the topological area of lowlands (in the Eastern parts) but could also be employed in tableland, intermediate shelf and alpine areas (Höltinger et al., 2016; Winkelmeier et al., 2014). By applying qualitative semi-structured interviews and conducting local case study workshops, including a visualization course and focus groups, common patterns of acceptance and non-acceptance are identified. This paper highlights how decision-making processes in the wind energy sector in Austria could be adjusted by taking into account important issues of acceptance and justice at the same time.

2. Conceptualizing and assessing acceptance

Assessing the acceptance of wind energy is a complex task, and we still are only beginning to understand how it is socially constructed (Aitken, 2010; Wolsink, 2012). Wüstenhagen et al. (2007), for example, tried to conceptualize social acceptance for the first time and distinguished between three dimensions: a) socio-political acceptance, b) market acceptance and c) community acceptance. They investigated spatial planning and financial procurement systems to assess socio-political acceptance, market innovation, and consumer and investor behavior to explain market acceptance, procedural and distributional justice and trust to contribute to the understanding of community acceptance. The three levels of acceptance do interact, are associated with main actors and are influenced by their interactions and contributing expectations.

In contrast to this previous application by Wüstenhagen et al. (2007) and similar by Wolsink (2012), we do not aim at strictly distinguishing between socio-political, market and community acceptance. The first reason is because justice is not only important at the local level. As we will later show, it is a decisive feature or precondition and therefore influences all three levels of acceptance. Second, the arguments raised by decision-makers, stakeholders and citizens are usually associated with all three dimensions of the triangle. We aim at grasping negative or positive preferences, values and beliefs toward wind energy, resulting behaviors, and their influence on decision-making processes. Such an approach is focused on the experiences and daily practices of people affected by the issue and is sensitive to possible interdependencies of the three levels of acceptance. In a subsequent conceptual step, the rich empirical material will be categorized according to common patterns of acceptance and non-acceptance. We define patterns as supra-individual practices or interests, which most people in a more or less coherent group of actors share, articulate and believe in. The patterns of acceptance and non-acceptance are dependent on various preferences and institutional settings and should be investigated when the development of wind energy is assessed.

Knowledge about these different patterns is a necessary rather than a sufficient condition for understanding and addressing conflicts over wind energy. At the beginning, middle and end of a siting or decision-making process, preferences about wind energy are expressed intensively and are subject to public debate. There are always groups of people opposing and supporting the wind farm project (Aitken, 2010; Horbaty et al., 2012; Wolsink, 2007b), which makes a compromise or even consensus nearly impossible.

According to the advocacy coalition framework (Jenkins-Smith et al., 2014; Sabatier, 1998; Sabatier and Jenkins-Smith, 1993) people engage in discussions or decision-making processes because they want to translate their beliefs into action. The actors involved are grouped or form coalitions according to different 'belief systems'. These belief systems determine how individuals and coalitions make decisions in the policy process and "*are organized in a hierarchical, tripartite structure*" (Sabatier, 1998). The '*deep core*' or normative beliefs (fundamental values, e.g., about human nature, liberty, security or individual freedom vs. equality) of the participants are non-negotiable. '*Policy cores*' are general perceptions or commitments in a specific policy field (e.g., perceptions about the causes of the problem; about who is responsible for the problem solving – the governments or the markets; about what is more important – economic development or the environment) and are guided by the deep core beliefs. They are relatively stable and cannot be easily changed. Only the so-called '*secondary aspects*' that relate to the implementation of a policy (e.g., instruments, regulations, and budgets) are likely to change and are subject to learning processes. As the deep core beliefs are constant and the policy cores unlikely to change, or not as quickly as a siting decision in a wind energy project, it is necessary to appeal to overarching objectives like social cooperation and to show the possible benefits regardless of the outcome of the process. This thinking correlates strongly with and is inspired by the philosophical notion of justice as fairness (Moon, 2014; Rawls, 1971, 2001). On the individual level, the concept of justice covers three main functions. First it is an important motive for action or inaction; second it serves as a reference point for evaluating the behavior of others; and third it can be seen as a precondition for acceptance (Baasch, 2012; Gross, 2007; Rawls, 1971, 2001; Wolsink, 2012). "*People who feel that they have been treated fairly are more likely to accept the decisions resulting from the process, and also will be more likely to trust the institution making the decision.*" (Gross, 2007).

The influence of environmental justice is already very well documented with respect to other infrastructure facilities such as nuclear power, waste or water plants (Ottinger, 2013; Walker, 2012) and is becoming more important in the field of wind energy as well (Gross, 2007; Horbaty et al., 2012; Langer et al., 2016; Wolsink, 2007b, 2012). Although on a general level different notions of environmental justice exist (Phillips and Sexton, 1999), most of the literature in the field of wind energy makes a distinction between two analytical strands: (a) procedural; and (b) distributional justice (Cowell et al., 2011; Gross, 2007; Hall et al., 2013; Langer et al., 2016; Ottinger et al., 2014). The first could be equated with the structure of the decision-making process

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