

Stormy times - Civic engagement in wind power development: between support and rejection

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STORMY TIMES. CIVIC ENGAGEMENT IN WIND POWER DEVELOPMENT: BETWEEN SUPPORT AND REJECTION

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Abstract

Power generation in Germany is increasingly moving from the use of fossil fuels and nuclear power towards renewable energy. A significant 'pillar' of this transition is the use of wind power. However, despite high levels of general support for the energy transition, there is an increasing amount of civic protest against the construction of wind turbines. This article aims to explore the range of the key patterns of argumentation used by citizens' initiatives, some of which *support* and some of which *oppose* the further development of wind power. Discourse analysis is used to identify centrally anchored patterns within the structures of the arguments used by the protest movements in order to shed light on the discursive field of the energy transition. The key areas of conflict in the negotiation processes are multifaceted, spanning from economic or health-related aspects to issues related in particular to the topic of landscape and the legal frameworks of nature conservation. Both supporters and opponents refer to these issues – although using significantly differing arguments.

Keywords

Energy transition – wind power development – discourse analysis – power of social resistance – citizens' initiatives and protest

1 Introduction

Since the adoption of the Renewable Energy Act (*Erneuerbare-Energien-Gesetz, EEG*) in 2000, renewable energy's share of gross electricity production in Germany has risen considerably, from approximately 6% to slightly over 32% in 2016. The aim of the Renewable Energy Act is to shift energy production away from the use of fossil fuels that are hazardous to health and climate and to seek renewable alternatives. Additionally, phasing out nuclear power production became a fundamental political aim within the German energy transition. The departure from nuclear power production was initiated following the nuclear disaster in Fukushima (Japan) in March 2011, thus focusing political measures even more on the further development of renewable energy sources. Accordingly, the German Federal Government has specified decisive goals for the future use of renewable energy. Renewable energy is to provide 40 to 45% of gross electricity generation by 2025 and 55 to 60% by 2035. A key measure for achieving these objectives is the coordinated expansion of both renewable energy and the electrical grid (cf. *BMWi* [Federal Ministry for Economic Affairs and Energy] 2017a; Weber et al. 2016; Weber et al. 2017).

Along with biomass, hydropower and geothermal energy, photovoltaics and especially wind power are the cornerstones of the energy transition in Germany. With repowering measures and further expansion at suitable onshore locations and through the use of offshore wind farms, wind power is expected to supply a substantial part of renewable energy production in Germany, in line with the stated policy objective of 'achieving an economically viable and climate-friendly energy supply while ensuring affordable prices and a high standard of living' (*BMWi* 2017b: n.p.). In this regard, according to the Federal Ministry for Economic Affairs and Energy, the provision of a variety of participation measures needs to be guaranteed while the development of renewable energy sources and the expansion of the electrical grids require effective management. This is considered vital especially with regards to concerns about bottlenecks in northern Germany's transmission networks (*BMWi* 2017a; for an overview on adapting the power supply, see also Monstadt 2007; Riegel/Brandt 2015; Schmitt 2016).

However, it is not only the technical aspects of power generation and transport that are crucial to Germany's energy transition. Spatial and social aspects are gaining in relevance as well, as shown by numerous public protests in the context of renewable energy production (e.g. Hildebrand/Rau 2012; Hübner/Hahn 2013; Neukirch 2014; Lennon/Scott 2015; Stegert/Klagge 2015; Kühne/Weber 2016b). This is due to the fact that the physical consequences of the transformation are perceived differently by those affected and are vigorously rejected by some. Against this background, by taking a discourse-theoretical perspective, our article traces the power structures and the assertiveness of specific positions in the context of wind power development along the following key research questions: What is the nature of civic engagement in the context of wind power development, and what key positions are anchored among its proponents and opponents? Additionally, the discourse-theoretical perspective offers the possibility to work out alternative perspectives, thus specifically highlighting power-related aspects by focusing on the construction of 'social reality' (in line with Berger/Luckmann 1966). This analysis is based on a mixed-methods approach that comprises quantitatively oriented and qualitative components, simultaneously

addressing the central themes of wind power discourses as well as allowing for a closer look at specific individual aspects. In various areas such as urban development and marketing (Mattissek 2008; Weber 2013), geocultural spaces (Glasze/Husseini/Mose 2009; Glasze 2013) or nature conservation policy (Chilla 2007), the potential of discourse-analytical perspectives has already been demonstrated and used, though only to a rather limited extent in relation to the energy transition (Zimmer/Kloke/Gaedtke 2012; Leibenath/Otto 2013; Gailing/Leibenath 2015; Weber et al. 2016; Weber/Jenal 2016; Weber et al. 2017) and not yet with respect to the currently growing resistance. This is the starting point of our project: the quantitatively oriented examination of citizens' initiatives and their motivations as well as the qualitative outlining of the spectrum of the key positions.

Below, we first present the basic theoretical perspective, methodology, and the individual components of our analysis. A closer look at the key structures of argumentation within the discourses about wind power and renewable energy development follows, including a comparison of the discursive patterns of both proponents and opponents. We conclude by pointing out key connections and outlining the consequences for the participatory implementation of the energy transition in Germany.

2 Theoretical perspective, methodology and analytical components

Below we introduce the social constructivist perspective and the central premises of discourse theory based on the work of Ernesto Laclau and Chantal Mouffe (Laclau 2007; Laclau/Mouffe 2015 [original English version 1985]) to elucidate the research perspective of this article. Additionally, we present the methodical approach and thus the triangulation of quantitatively oriented and qualitative analytical components that are based on the underlying research perspective.

2.1 The social constructivist perspective

In recent years, there has been increasing criticism of an 'unconditional belief in the reality of the physically perceived world' (Wetherell and Still 1998), particularly in the humanities and social sciences. Gaining absolute knowledge about the world is viewed as impossible. Thus there is 'no such thing as pure and simple facts' (Schütz 1971 [1962]: 5; Burr 2005; Kühne 2013). Social constructivist approaches emphasise the social construction of 'reality' in everyday practices and perceptions, i.e. within patterns of behaviour which emerge from social interactions (Berger/Luckmann 1966). Accordingly, the premise also lies in rejecting the self-evidence of reality and thus the notion of reality as subjective abstraction or subtraction (cf. Bruns/Kühne 2015; Kühne 2015; Pörksen 2015).

As a result, the social constructivist perspective forms the foundation for numerous other fields of research including gender studies, critical psychology, discursive psychology, cultural studies, deconstructivism, post-structuralism and, in general, postmodernism as well as the discourse analysis used here (Burr 2005; Gergen/Gergen 2009). The potential of the constructivist perspective lies in its ability to take

a specific, critical look at things and to show that their meanings are relative and reversible.

This also opens up an alternative approach (as will be shown in detail later) for the 'landscape' theme that is of central importance to the protest movements. Against the backdrop of socially constructed reality, the overarching, analytical question arises of how 'landscape' is produced and what meanings and attributions become established, particularly with respect to wind power and the energy transition (Kühne 2006; Kühne/Weber 2016a) – i.e. beyond the 'natural existence of landscapes'.

With the following discussion of our discourse-theoretical approach, we will complete the explanation of the key research perspective based on which we are able to address the raised questions.

2.2 The discourse-theoretical approach

The energy transition involves radical changes, with certain positions gaining so much influence that others are relegated to the sidelines. An analytical perspective based on discourse theory can assist in understanding these developments. The starting point for our poststructuralist, discourse-theoretical considerations based on the work of Ernesto Laclau and Chantal Mouffe (Laclau 1990, 2007; Laclau/Mouffe 2015 [engl. Orig. 1985]) is the assumption that meanings are never conclusively anchored. Potentially, they are always subject to changes (Glasze 2013: 73). Again and again, observations show that shifts can take place even in putatively stable circumstances (Laclau 1994: 1-2; Weber 2013: 50). Nuclear power plants can serve as an example: in the 1960s, in Germany, they were widely regarded as pioneering but are now increasingly associated with risks (Bauer 1995; Gleitsmann 2011: 20).

Additionally, time and again, temporary fixations of meaning arise that appear accepted and 'normal' in everyday life. For a time, they are not called into question and supplant alternative interpretations. However, as a consequence of the 'impossibility of a comprehensive, fixed social structure' (Glasze 2013: 74) and constantly ongoing negotiation processes, changes and ruptures are possible within temporary fixations – meanings and attributions can be transformed through processes of social negotiation. Ernesto Laclau and Chantal Mouffe call these temporary settings of meaning 'discourse' (Laclau/Mouffe 1985: 112). Discourses are described as an attempt to temporarily fix meanings, whereby their contingency remains central. 'Every discourse is a contingent construct because it was created by people but does not necessarily need to be as it is and could also be constructed differently, though not arbitrarily so' (Leibenath 2014: 125); thus multiple discursive threads can exist and gain relevance simultaneously. And whether wind turbines are determined to be 'modern' and 'aesthetically pleasing' or 'ugly' and 'a disfigurement of landscapes' is not naturally preordained but is the result of social negotiation processes in which different positions can gain interpretive authority (on the topic of interpretive authority in spatial contexts, see also Kühne 2008). Thus, what is crucial is which positions become so established that their constructive character recedes into the background (i.e. is forgotten) and they are considered to be immutable; such fixed

meanings are called hegemonic (i.e. especially powerful and successful) discourses by Laclau and Mouffe. They can arise when different moments are equated around a central nodal point that becomes crucial for the discourse (Jørgensen/Phillips 2002: 26-27). Yet they can also occur through demarcation from the outside, i.e. from that which the discourse is *not*; in this way, the outside provides identity and has a constitutive effect (Laclau 1993; Thiem/Weber 2011: 175-176; see also Fig. 1). Alternative social realities are suppressed and marginalised as a result of the success of hegemonic discourses (Laclau 1993; Glasze/Mattisek 2009: 162). The marginalised discourses are also to be understood as sub-discourses that stand in the shadow of hegemonic discourses but can potentially advance to become successful, hegemonic discourses themselves (Weber 2013: 63).

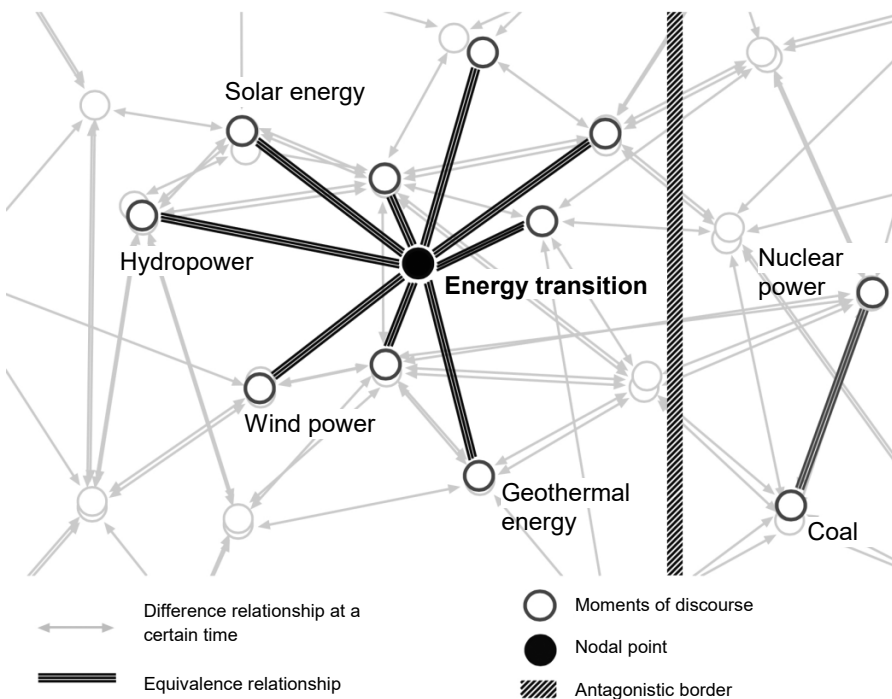


Figure 1: Discourse theory of Ernesto Laclau and Chantal Mouffe. Source: the authors, based on Glasze (2013) and Weber (2013)

Ultimately, a discourse theory perspective can on the one hand differentiate discursive settings, central nodal points, moments in a discourse and the outsides of discourses in order to illuminate how discourses are constituted and how they gain special power. On the other hand, it can also use the presumed unambiguousness of hegemonic discourses as a starting point to reveal alternative, parallel threads of discourse. That puts the focus on the power aspects that play a key role in the discursive analysis of social resistance movements against the energy transition.

2.3 Methodology and analytical components

Building on the theoretical ideas of Ernesto Laclau and Chantal Mouffe and their concept of discourse (see Fig. 1), our analysis of civic resistance focuses on examining temporary fixations of meaning. For our operationalisation of the concepts, we used a triangulation of quantitative and qualitative methods. Using quantitative methods and starting from the initial argument, regularities and connections in lexical elements can be identified, thus making ‘large-scale structures of speech, i.e. patterns of language use’ (Mattissek 2008: 122), tangible and visible (Guilhaumou 1986: 27; Teubert 1999; Glasze 2007: paragraphs 34 and 35; Weber 2015). Our examination of the citizens’ initiatives’ websites (discussed in detail below) builds on this premise: (re)produced patterns of argumentation and associations were quantified so as to make an overarching determination of which positions hold hegemonic status.

In addition, we use qualitative methods to further differentiate quantitative peculiarities within the discourses (Weber 2015: 105). What arguments are used to support certain positions? What regularities can be identified? Here, we make use of the method of narrative pattern analysis (Glasze/Husseini/Mose 2009). Narrative patterns are ‘conceived of as regular combinations of elements that establish relationships of a specific quality’ (Glasze 2013: 115). Relationships of equivalence and difference are especially traced out to identify moments and nodal points, but also elements from the discursive outside (Somers 1994: 616; Glasze 2013: 116). In this way, we can work out both fixed meanings as well as signs of change processes (see also Glasze/Husseini/Mose 2009; Weber 2013: 66 et seq.).

The analysis underlying the results presented below focuses on negotiation processes in the discursive field of the energy transition and specifically in that of wind power development. For this purpose, we used a *Google* search (*Google* is currently used by nearly 95% of internet users in Germany and can thus be viewed as the central source for information research online (statista 2015)) with specific German keywords (see Text box 1) to identify a total of 280 German citizens’ initiatives *for* and *against* the development of wind power. The sample is highly unbalanced, with 10 of the identified citizens’ initiatives arguing *in favour* of the local or supra-regional development of wind power and 270 *against* it.

Bürgerinitiative Windkraft (wind power citizens’ initiative), *Bürgerinitiative Windpark* (wind farm citizens’ initiative), *Windkraftgegner* (wind power opposition), *Bürger gegen Windkraft* (citizens against wind power), *Bürger Gegenwind* (citizens against wind [translator’s note: *Gegenwind* means ‘headwind’, but is read here as ‘against the wind’]), *Bürgerinitiative pro Windkraft* (citizens’ initiative for wind power), *Bürger für Windkraft* (citizens for wind power), *Bürger machen Wind* (citizens make wind [translator’s note: German phrase for ‘to stir up’])

It should be noted here that this research does not cover the entirety of civic associations operating in Germany but is merely a subset of the citizens' initiatives that can be found using *Google*. In addition, the online content of the citizens' initiatives does not necessarily correspond to their level of local activity. Thus, while the publicly accessible content of the citizens' initiatives' websites and profiles is examined in this article, the local impact inevitably remains 'hidden' for the moment. The evaluation of the citizens' initiatives' websites is divided into different stages of analysis. In the first stage, basic data pertaining to the citizens' initiatives was compiled, such as their locations and the respective population density in inhabitants per square kilometre. Such data can be used to draw conclusions about the distribution and possible concentrations of citizens' initiatives as well as to illustrate other structural differences. In the second stage of analysis, using quantitative approaches, key positions and patterns of argument were inductively compiled and systematised in order to show hegemonic, anchored positions as well as sub-discourses. This enabled us to investigate the questions of different basic attitudes and a spatial variation in the argumentation and discourses of the supporting and opposing citizens' initiatives. To reveal further specific and more detailed regularities in the citizens' initiatives' negotiation processes, the third step analysed narrative patterns in more detail, examples of which are shown in text boxes below. By means of the approaches described above, further light is shed on the discursive associations relating to wind power development. They provide information about the social construction and interpretation of the central concepts and fields of conflict in the context of the energy transition.

3 Citizens' initiatives in the context of wind power development

The starting point for this analysis is the *Google* survey of 280 citizens' initiatives that have formed to *support* or *oppose* the construction of wind turbines. From a discourse theory perspective, the citizens' initiatives are to be viewed as institutionalised groups that present certain positions and (re)produce them (hierzu Nonhoff 2006; Glasze 2013). The spectrum of the key fields of conflict in the negotiation processes of these citizens' initiatives covers a diverse range of aspects that we present below. We begin with an examination of the findings regarding the spatial distribution and concentration of civic resistance; this is followed by a discussion of the discursive regularities of the supporting and opposing citizens' initiatives, which reveals striking parallels.

3.1 Spatial distribution and concentration of civic engagement

What peculiarities are initially apparent in the spatial distribution of the 280 citizens' initiatives? As regards location (Fig. 2), there is a spatial concentration of citizens' initiatives opposing the development of wind power in the southern and western German federal states. Regarding the opposition movements, the following spatial clusters can be observed: 60 groups in Hesse, 45 in Baden-Württemberg and 42 in North Rhine-Westphalia (see Fig. 3). This is in contrast to the number of wind turbines in those federal states: especially in Hesse and Baden-Württemberg there is a high

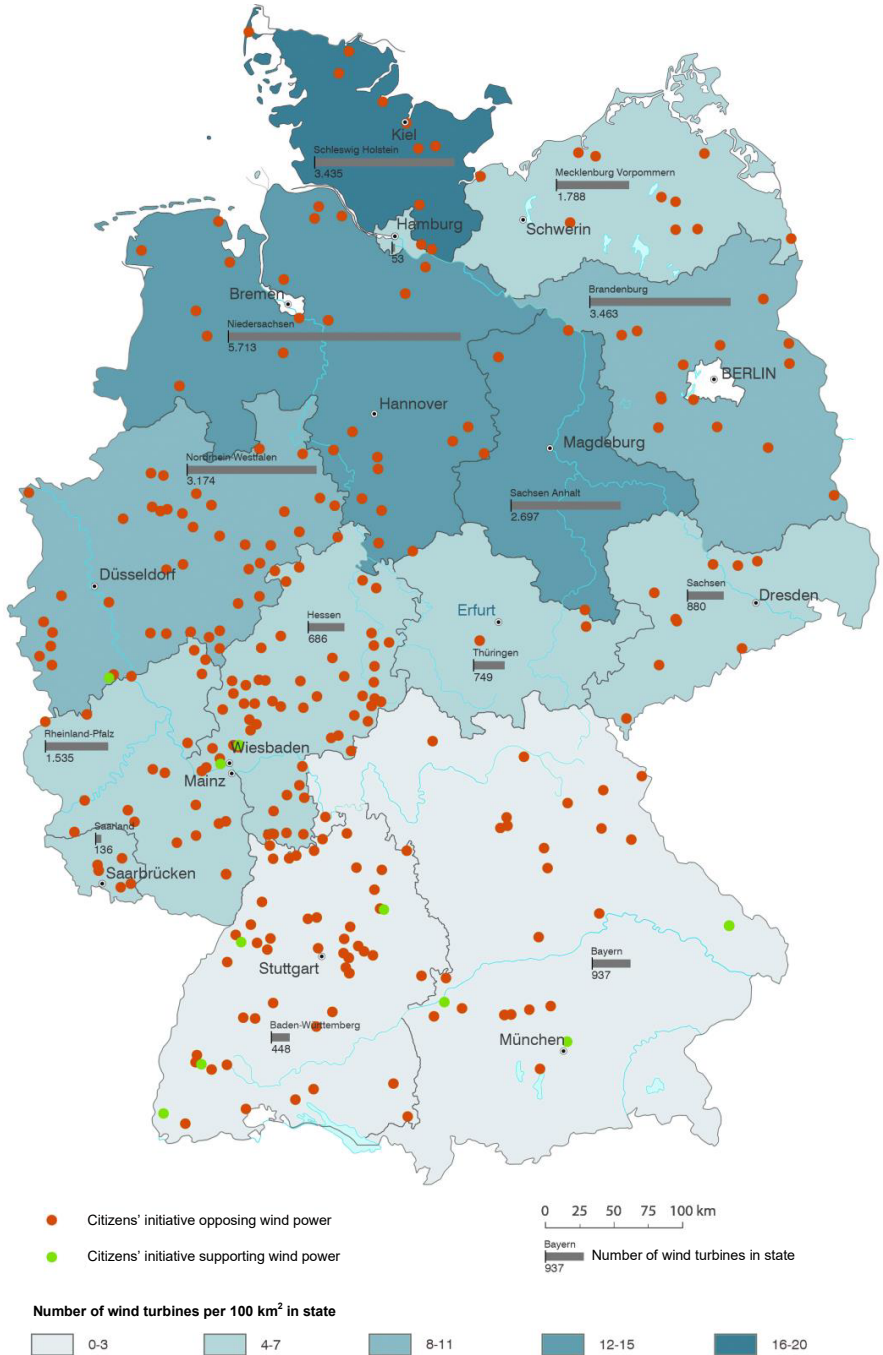


Figure 2: Location of citizens' initiatives and number of wind turbines per 100 km² in Germany's federal states. Source: the authors. Produced by Albert Roßmeier, 2016. The locations of citizens' initiatives supporting and opposing wind power are marked (based on Google research). Also indicated are the number of wind turbines in each federal state and the number of wind turbines per 100 km² in each state (based on German Wind Energy Association 2016; statista 2016).

degree of resistance and a relatively small number of wind turbines. Our research finds that there are more civic protest movements in southern and western Germany where wind power is used to a much lesser extent; these movements mainly reject further development in their own federal states but tend instead to call for supra-regional development (cf. Figs. 2 and 3).

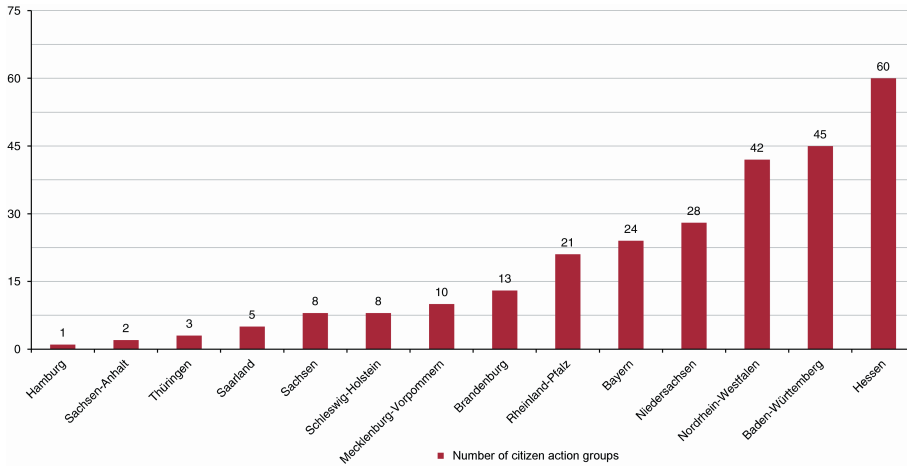


Figure 3: Number of citizens' initiatives opposing wind power in the federal states (n = 270).

Source: the authors (survey and illustration based on Google research)

It can also be claimed that the acceptance of wind turbine projects is particularly low in sparsely populated areas (see also Kühne 2006). The distribution of the citizens' initiatives against wind power by the population density of their locations shows a high concentration in sparsely populated areas that are designated as rural. More than half of the citizens' initiatives studied were established in areas that feature population densities of less than 150 inhabitants per square kilometre and are classified as rural areas (see Fig. 4) by the Federal Institute for Research on Building, Urban Affairs and Spatial Development (*Bundesinstitut für Bau-, Stadt- und Raumforschung, BBSR, BBSR 2011*). On the one hand, it is in a way 'automatic' that many wind turbines are found in sparsely populated areas designated as rural, so that resistance there is not especially surprising. On the other hand, one should investigate the proposition that transformation processes in 'spaces designated as rural' (see Linke 2015) are viewed with greater scepticism than in urban or suburban areas and are thus rejected (auch Weber et al. 2017).

To outline the specific regularities in the discursive field of the German energy transition, below we discuss the prevailing patterns of argumentation and positions used by the citizens' initiatives to support and oppose wind power development.

Number of citizens' initiatives against wind power for different population density ranges

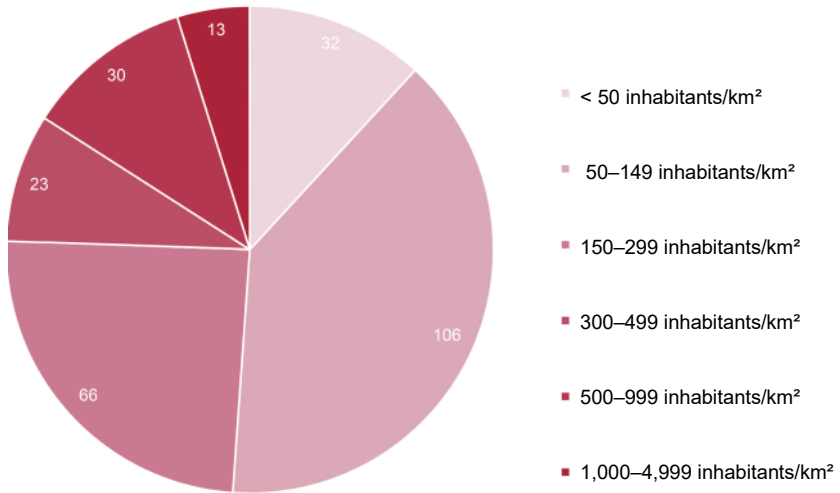


Figure 4: Number of citizens' initiatives against wind power, grouped by the population density of their locations (n = 270). Source: the authors (survey and illustration based on Google research)

3.2 Patterns of argumentation used by supporting citizens' initiatives

Argumentations based on the usefulness or necessity of wind power development

The citizens' initiatives that argue in favour of the energy transition and wind power development—both locally and supra-regionally—emphasise in a largely similar manner the usefulness or necessity of using wind power, in general and also within Germany specifically. Accordingly, their websites feature arguments about the 'urgency' of the energy transition and a combination of different renewable energy carriers. The citizens' initiatives see the shift to wind power as unavoidable, particularly in view of the highlighted risks of conventional energy production; as a result, nuclear and coal-fired power are pushed to the outside of the energy transition discourse and cannot (or can no longer) be linked to constructs of 'viable' and 'safe' energy production. This also makes the variability of discourses evident, even those that are largely hegemonic and established; in its early phases, nuclear power was often propagated as pioneering and advanced (Gleitsmann 2011), a view that underwent further significant change after the Fukushima disaster. In the negotiation processes of their proponents, wind turbines ultimately represent, 'a new and sustainable energy industry that is free of elemental hazards, helps to avoid climate change, and reduces dependency on energy-exporting countries' (citizens' initiative *BürgerWIND Bayerwald* 2015). Wind turbines are discursively linked in an equivalency chain with a 'cleaner', 'safer' and 'more viable' energy supply.

The websites of these citizens' initiatives also present concerns about climate change processes that further underscore the necessity of continued wind power development, among other things by emphasising the usefulness of energy production

in southern Germany, specifically in Baden-Württemberg. For example, a Bavarian citizens' initiative writes: 'Wind power needs to be expanded in southern Germany to replace dangerous nuclear power plants and coal-fired power stations that are harmful to the climate [...] Along with solar energy, wind power is the main pillar in the use of renewable energy to generate electricity' (citizens' initiative *Energiewende Waldkirch* 2013; cf. also the citizens' initiative *Windkraft für Michelbach* 2016).

Argumentations concerning political leadership in the energy transition

The discourse threads of the citizens' initiatives arguing in favour of building wind turbines include various largely similar positions critical of energy policy measures and guidelines. The citizens' initiatives underscore their criticism of the political leadership with arguments about the necessity of wind power development, referring to the 'fundamental dangers' (citizens' initiative *BürgerWIND Bayerwald* 2015) of climate change. They use emotional language in connection with the continued use of conventional energy sources, saying that in addition to phasing out nuclear power, the use of coal-fired power should also be brought to an end. The citizens' initiatives also cast doubt on the motivation of municipal policies with regard to the energy transition and the use of renewable energy: 'Most municipalities are not acting systematically with regard to the energy transition. Instead they are misusing the planning autonomy delegated to them for short-sighted, purely egotistical goals. [...] The result is isolated, low-yield wind turbines on lots of mountains [...]' (citizens' initiative *Bürgerwindrad Blauen e.V.* 2016).

The proponents' negotiation processes also include positions critical of the Bavarian state government's '10H rule'. The aim of this regulation adopted on 21 November 2014 was to 'establish a balance of interests between the requirements of the energy transition and the interests of local residents' (STMI undated). However, the supporting citizens' initiatives frequently (re)produce the regulation's restrictive character with respect to further development (citizens' initiative *Mütter gegen Atom-kraft e.V.* 2016); they argue that tall and 'efficient' wind turbines would no longer be feasible because of the great distances that they are required to be from residential areas (2 km for a 200 m wind turbine according to the 10H rule).

In addition, political aspects of energy supply also play a key role in the discourses supporting wind power, with criticism formed around a politically induced dependency of nationwide energy production on 'raw material imports and multinational corporations' (citizens' initiative *Energiewende Waldkirch* 2013). Thus the use of wind power is ultimately viewed as an alternative means of centralised energy production and is discursively linked to arguments about regional value creation opportunities: 'With a company based in the region, we see more long-term contractual security and regional participation in a future-oriented industry [...]. We thus support a development that enables a decentralised energy structure instead of the monopolistic corporations of the nuclear age' (citizens' initiative *Windkraft für Michelbach* 2016).

Argumentations concerning economic aspects

The negotiation processes among supporters of wind power also feature argumentations involving economic aspects. Along with positions describing wind power as an ecological and economical alternative to conventional energy production, patterns of argumentation around the potential for municipal and regional value creation are also crucial: ‘The future belongs to wind power [...]. The added value from wind power stays in the region, and that means additional income from business taxes for the municipalities’ (citizens’ initiative *Pro Wind Landkreis Günzburg* 2014). The citizens’ initiatives also emphasise the benefits of onshore wind power use; they maintain that compared with offshore wind power, it involves lower investment costs and less expansion of high-voltage power lines and networks, which are ‘economically absurd and expensive for end customers’ (citizens’ initiative *Energie-Zukunft-Rheingau* 2016).

Discourses on wind power also involve addressing the opposing side’s patterns of argumentation and taking positions on them. For example, in some cases the proponent citizens’ initiatives argue *against* the postulated drop in value of properties in the immediate vicinity of planned or newly built wind turbines. A Bavarian citizens’ initiative attempts to relativise the concerns of numerous wind power opponents and explains pricing as the result of various factors: ‘Property values are not objective figures, but the result of numerous factors that are assessed positively or negatively depending on the subjective interests of potential buyers. Every street, every item of infrastructure, every construction project in the neighbourhood, and even developments in neighbouring municipalities, can trigger such effects. Thus, our legal system applies objective criteria (e.g. protection against unacceptable emissions) to ensure the necessary balancing of interests’ (citizens’ initiative *Pro Wind Landkreis Günzburg* 2014).

The citizens’ initiatives also address reservations about potential losses in the tourism sector that would, according to the largely comparable argumentations shared by numerous opposition groups, result from the erection of wind turbines in areas developed for tourism; such reservations are correspondingly rejected. To some extent, however, the citizens’ initiatives supporting the construction of additional wind turbines acknowledge in their negotiation processes that such construction may have negative physical consequences, as will be shown below. However, they relativise these consequences by emphasising that perceptions of landscape are subjective. ‘There is no denying that wind turbines change the landscape. [...] There are many onshore turbines on the German coast. That clearly has no impact on tourism,’ according to a citizens’ initiative from Hesse (citizens’ initiative *Energie-Zukunft-Rheingau* 2016).

What is striking here is the active adoption of the opposing side’s line of argumentation or of criticism (re)produced in the media, which is then discursively reframed by those in favour. For the proponents, wind power development and economic aspects can ‘definitely’ be coupled and are interwoven.

Argumentations concerning health aspects

In addition to the discursive patterns described above, health aspects also play an important role in the negotiation processes around the energy transition. Here, too, citizens' initiatives in favour of wind power development address the lines of argument of those which oppose it (or of the media) and refute the inherent, discursive fixations. Here, it becomes clear that the established positions are in part diametrically opposed. As we show below, across the citizens' initiatives that have formed to oppose wind power development, wind turbines have to a widespread degree become discursively anchored as sources of harmful emissions and are drifting to the discursive outside of leisure and recreation areas. In contrast, the side approving of wind power development largely denies the harmful effects of noise emissions as well as their acoustic perceptibility. Specifically, one citizens' initiative maintains that 'infrasound below the threshold of audibility, i.e. sound with a frequency below 20 Hz and a sound intensity level below 130 dB, has no negative impact on the human body at all. [...] Even at close range (less than 200 m), the infrasound produced by wind turbines does not come close to reaching these values and is thus completely harmless' (citizens' initiative *Pro Wind Landkreis Günzburg* 2014).

Moreover, the citizens' initiatives in favour of wind turbines also point to the Federal Immission Control Act (*Bundesimmissionsschutzgesetz, BImSchG*), which regulates the minimum distances between wind turbines and residential areas; they point out that such distances are determined during approval processes and would rule out adverse acoustic effects that exceed legal limits. Accordingly, a wind turbine would have to be 'built so far from a settled area that its noise emissions will not exceed these maximum noise immission values in the settled area. Compliance with the limiting values also ensures that so-called infrasound will have no impact' (citizens' initiative *BürgerWIND Bayerwald* 2015). Wind turbines are thus largely anchored in the discourses of wind power advocates as harmless to health.

Argumentations concerning the topic of 'landscape' – aesthetic/emotional as well as nature and wildlife conservation aspects

From a social constructivist perspective, the subjective construct of reality and thus of the concepts of landscape and home is of particular interest in the arguments involving these concepts. This is because the citizens' initiatives' underlying ideas of landscape can also shed additional light on the prevailing patterns and structures of argumentation, enabling conclusions to be drawn about established regularities and interpretations in the key areas of conflict. Even among initiatives that support the ongoing development of wind turbines, 'landscape' seems to be constructed differently. Some of the citizens' initiatives place particular emphasis on the subjectivity of landscape aesthetics (see Text box 2) and thus deny any differentiation into 'landscape' and 'non-landscape' or 'beautiful, attractive' and 'ugly' debased and/or overbuilt 'landscapes' (cf. Otto/Leibenath 2013).

Quote from the website of the citizens' initiative BürgerWIND Bayerwald (2015):

'The way nature and landscape are perceived is ultimately always subjective. It is determined by the person doing the perceiving. This perception is different for each person and is influenced among other things by the person's ethics, education, upbringing, experiences and behaviour. In the actual moment of perceiving, additional subject-specific factors such as the momentary mood and the current activity also come into play. The way things are perceived is also determined by the person's own value system.'

Quote from the website of the citizens' initiative Energie-Zukunft-Rheingau (2016):

'There is no denying that wind turbines change the landscape. Whether they are considered to be attractive or ugly is very subjective.'

Quote from the website of the citizens' initiative Pro Wind Landkreis Günzburg (2014):

'Wind turbines change the familiar appearance of the landscape. Depending on the existing views and scenery as well as citizens' viewing habits, wind turbines can be perceived as disturbing, or at least be feared as such, during the day or at night (position lights). Their impact can be evaluated in advance and minimised with careful site selection, technical precautions and realistic visualisation; whether it is bearable is a matter for the project discussions.'

Quote from the website of the citizens' initiative Pro Windkraft Niedernhausen (2015):

'Wind turbines are visible and obvious encroachments on a landscape's appearance. Since wind turbines have been around for only a relatively short period, people sometimes find the sight of them to be intrusive and unfamiliar. But the energy transition and a shift to renewable energy can only succeed in Germany if we exploit wind power intensively.'

Text box 2: Narrative patterns of landscape-related argumentations for wind power

In the narrative patterns shown in Text box 2, the physical consequences of wind power development are understood as changes to be evaluated subjectively. What becomes clear in these negotiation processes is a certain regularity, revealing the specific construction of 'landscape' as the subjective configuration or individual combination of physical objects. Wind turbines could thus, over time, also come to be considered 'normal' and no longer 'intrusive'. Here, 'landscape' and wind power are discursively coupled.

Furthermore, the tight linkage between the discursive fields of landscape and home is evident in the supporting side's negotiation processes, with home frequently a construct of 'familiar landscapes'. Thus, landscape is to be understood as a 'physical

manifestation of cultural identity' (Kühne 2008: 319). Hence, the emotional appeal of the approach and particularly of the construct of 'home' becomes clear, as shown on the website of a Bavarian citizens' initiative: 'Only together can we accomplish the energy transition, retain and strengthen our home [...] and our rural coexistence' (citizens' initiative *BürgerWIND Bayerwald* 2015). This also brings aspects of intergenerational fairness to the fore, which refer back to the necessity of wind power development: 'What is at stake is a future worth living for us humans, for our health, and it's about finally phasing out nuclear power production' (citizens' initiative *Bürgerwindrad Blauen e.V.* 2016). 'Wind power', 'home' and 'health' are linked in the supporting discourse; 'nuclear power' is on the outside and, as noted above, so is coal-fired power.

However, the argumentation patterns not only include aesthetic and emotional aspects of landscape and home, but also more cognitive aspects that are frequently (re)produced from an expert nature and wildlife conservation perspective. Supporting citizens' initiatives address a wide range of criticisms of the opponents of wind power and refute them or emphasise their irrelevance. For example, citizens' initiatives in favour of building more wind turbines claim a low risk of birds colliding with the rotating rotor blades of the turbines: 'Research published so far shows a very low risk for potentially endangered bird groups. [...] There is no consistent picture; foreexample, the rare eastern imperial eagle only settled in the Parndorf Heath near Vienna after a large wind farm had been built there' (citizens' initiative *Mütter gegen Atomkraft e.V.* 2016). A citizens' initiative from Hesse expressed itself similarly: 'The probability of birds colliding with wind turbines can generally be considered very low' (citizens' initiative *Pro Windkraft Niedernhausen* 2015). But the low risk of collisions with wind turbines is not the only aspect emphasised in the negotiation processes. The turbines are also evaluated as a potential risk to birds along with several other significant causes of death, putting the risk in a different perspective: 'There are 150 to 200 million birds living in Germany. The highest estimated number of birds possibly killed is 100,000. A much larger number of birds (between 20 and 30 million) are killed in road traffic and by buildings' (citizens' initiative *Mütter gegen Atomkraft e.V.* 2016).

Argumentations concerning opportunities for civic participation in decision-making processes

With respect to civic participation in planning processes regarding the construction of wind turbines, supporting citizens' initiatives emphasise the need for extensive opportunities for involvement in light of the transformation of the 'home landscape' (Kühne 2006) and structures inherent to the energy transition. Here, too, it is apparent that the patterns of argumentation in the negotiation processes exhibit emotional and aesthetic (see also Ipsen 2006) references: 'Citizens need to be integrated more since most have the feeling that they are not consulted when their home is changed by the installation of wind turbines. The people should be involved more in wind projects in their areas (community wind farms). Then it might well be possible that their aesthetic feelings towards the turbines would change' (citizens' initiative *BürgerWIND Bayerwald* 2015). Aspects for increasing acceptance, which the citizens' initiatives hope for from wide-ranging participation procedures, are crucial. Thus, according to the citizens' initiatives, the opportunity for the energy transition

lies in the participatory shaping of the future energy supply and its spatial manifestation: ‘The participation of local residents and not the interests of major investors or energy corporations should be a priority in the use of wind power’ (citizens’ initiative *Pro Wind Landkreis Günzburg* 2014).

Through their regularity, reproduced through various citizens’ initiatives, these patterns of argumentation become established moments within the discourses in favour of wind power. Now, to demonstrate the parallelism of different threads of discourse, below we examine the main structures and patterns in the negotiation processes of the identified citizens’ initiatives that have formed to oppose the construction of wind turbines.

3.3 Key patterns of argumentation used by opposing citizens’ initiatives

As it does on the supporting side, the spectrum of central areas of conflict in the negotiation processes of the citizens’ initiatives opposed to wind power development encompasses economic, health and particularly landscape as well as nature and wildlife conservation aspects. Here, too, the prevailing patterns of argumentation can be associated with more cognitive, emotional or aesthetic evaluation patterns. As in the case of the supporters, critics also demand increased participation in the planning of wind turbines. However, their aim is less to quickly push forward with the energy transition than to give more weight to ‘the will of the citizens’, which in their view is that wind turbines should not be built at every potentially viable location.

Based on the results of our *Google* survey, we quantified four central areas of conflict: nature conservation, home and landscape, health, and economic reasons. Almost 70% to about 90% of the citizens’ initiatives mentioned these aspects on their websites, thus (re)producing and anchoring them (cf. Fig. 5; also Weber/Jenal 2016). We examine them in detail below.

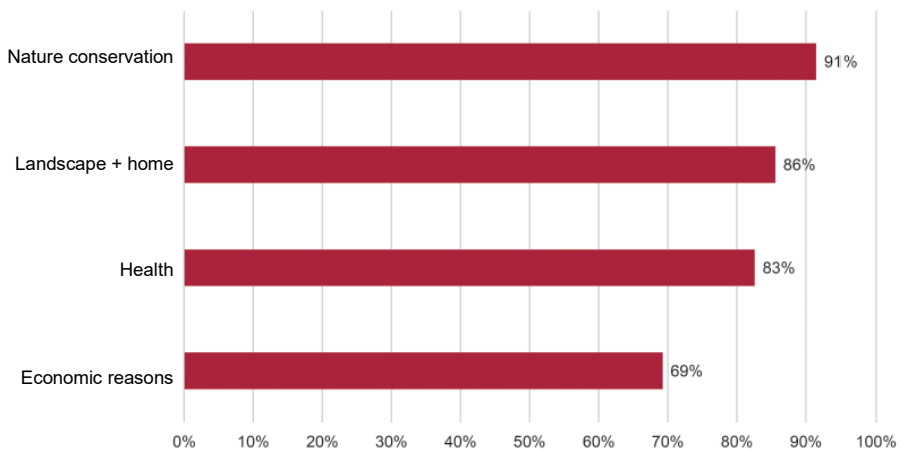


Figure 5: Key arguments: percentage of citizens’ initiatives ($n=270$) emphasising the arguments. Source: the authors (based on the results of a *Google* survey).

Argumentations concerning nature and wildlife conservation as well as landscape aspects

Citizens' initiatives that oppose the construction of wind turbines regularly voice concerns about nature and wildlife conservation, as well as worries about changes in 'home and landscape', thus shifting wind turbines to the outside of 'nature' and 'landscape' preservation discourses.

In the opposing side's negotiation processes, the energy transition as a whole or wind power development is seen as being in conflict with overarching conservation goals; 91% of the citizens' initiatives express opposition to the consequences of wind power development that are related to conservation issues. In particular, collisions – and the resulting deaths – of (strictly protected) bird species with wind turbine rotors are a preeminent motivation of the opposing citizens' initiatives. In their view, this is a disproportionate consequence that is incompatible with the aims of the energy transition and of wind power development. Ultimately, this also brings strong criticism to bear on prominent nature conservation organisations, which are impacted by the conflicting goals of conservation and the advancement of the energy transition as described by the citizens' initiatives. The clearing of forests and fears of an accompanying loss of biodiversity also play a role in arguments about the 'senselessness' and 'hastiness' of the energy transition (for more details, see Text box 3).

Quote from the website of the citizens' initiative Windkraft Bad Marienberg (2016):

'Distinctive views and scenery will be irreversibly destroyed. Sources of top-quality drinking water will become unusable. Endangered species such as the red kite and bats will either be killed or driven out of their habitats. Semi-natural recreation areas in rural regions will be encroached by energy production and become industrial sites for cities.'

Quote from the website of the citizens' initiative Gegenwind im Oderbruch (2015):

'Not only will people experience a decline in property values and a debasement of the surrounding landscape, in other words the destruction of their home as nature and recreation areas are radically distorted, they will also suffer from sleep disorders, dizziness, cardiac arrhythmia. Who is responsible for all this?'

'The wind turbines planned for the Oderbruch will destroy not only the distinctive appearance of the landscape with its dykes, villages, churches and castles, they also harbour dangers for people and animals.'

Quote from the website of the citizens' initiative Greiner Eck e.V. (2016):

The impact of the wind turbines built thus far, and especially the impact of those still in planning, on Germany's forested highlands will be a virtual ecological catastrophe. The impact on soil, water, fauna, flora, aesthetics, the recreation and enjoyment value, and not least on the health and the economic base (tourism) of the people living there and on their property, which except for wind turbine sites will often lose more than one-third of its value, will be enormous.'

Quote from the website of the citizens' initiative Gegen den Windpark Zollstock-Springstein (2016):

'Wind turbines will destroy our natural and beautiful scenery. They will lead to the industrialisation of the landscape. At least 1 hectare of forest has to be cleared for 1 wind turbine. Access roads and the construction of ramps for heavy goods vehicles will require significant additional clearing. Concrete foundations seal the ground completely with the loss of all soil services.'

Text box 3: Narrative patterns of argumentation against wind power relating to the topics of 'landscape' and 'home'

What becomes clear in the narrative patterns is the assumed reality of 'landscape': 'landscape' becomes a 'feature' that would be compromised or debased or, worse yet, destroyed as a consequence of physical changes or the implementation of physical elements. Of the analysed citizens' initiatives, 86% present arguments about the threatened loss of 'landscape quality'; the websites refer to 'disfigurement' and the 'loss of recreational value'. The close link between aesthetic/emotional aspects of landscape and the aspects of nature and species conservation is also apparent, with the opposing citizens' initiatives claiming that the construction of wind turbines would

cause land-scapes to lose not only their aesthetic value but also their function as a habitat for flora and fauna.

In addition, the negotiation processes of these citizens' initiatives also include positions on 'landscape' that have strong links to the emotional construct of 'home': since society uses landscape constructions for social anchoring in an area, the subjective loss of value also results in the 'destruction of its home' (citizens' initiative *Gegenwind im Oderbruch* 2015). And since cultural and regional identity in turn are based on the subjective constitution of home, the perceived destruction of landscapes and homes also threatens the loss of identity. Accordingly, wind turbines are linked to the 'loss of home and identity'.

'Landscape', 'home' and 'nature and wildlife conservation' line up discursively in equivalence chains, bolstering the position of rejecting wind turbines.

Argumentations concerning health aspects

In addition to the patterns of argumentation involving the multidimensional 'destruction' and 'debasement' of landscapes, the negotiation processes of the citizens' initiatives against wind power also include specific criticism of its impact on health. Of the citizens' initiatives considered, 83% criticise the development of wind power due to serious concerns and fears about imminent health hazards. The protest movements see inevitable side effects of wind turbine operation as relevant to the health of both people and animals. They claim that rotating turbine blades cause noise emissions that have different effects on organisms depending on their frequency range and that audible wind turbine emissions result in sustained acoustic and thus physical strain under which the residents' quality of life suffers. But it is emissions in the inaudible frequency range (infrasound) in particular that are reproduced with discursive regularity as hazardous to health and with reference to numerous medical studies. 'They cause many forms of discomfort in varying degrees depending on susceptibility: in particular, headaches and migraines, sleep disorders, poor concentration and memory problems, tinnitus, dizziness, nausea, changes in heart rate, irritability, agitation and anxiety will be the inevitable consequence of irresponsible planning' (citizens' initiative *Fröhner Wald – für Mensch und Natur* e.V. 2016).

Emotional language is also employed in the negotiation processes concerning the health impact of wind turbines, including terms such as 'torture, expropriation, displacement, illness and death' (citizens' initiative *Für Transparenz und Gerechtigkeit* 2016); this not only pushes wind turbines to the outside of the 'semi-natural landscapes' discourse, but also places them in diametrical opposition to the concept of 'viable energy production'. Members of the protest movements mention 'economic senselessness combined with the ecological damage [from wind power development]' (citizens' initiative *Windkraft Bad Marienberg* 2015), which also contributes to 'irresponsible planning' (citizens' initiative *Fröhner Wald – für Mensch und Natur* e.V. 2016) from a health view-point. What can thus be discerned in the field of conflict over the health impact of wind turbines is that different threads of argumentation are discursively linked and attest to regularity.

In addition to their deep concerns about emissions from wind turbines, the opposing citizens' initiatives also criticise potential malfunctions or accidents involving turbines, emphasising the risk of fires in the rotor hubs at heights where it would be impossible to extinguish them. According to this argument, wind turbines in forests are considered especially dangerous due to the economic and ecological damage they could cause. Hazards for groundwater due to leaking oil from the turbines are also mentioned in this context. In the patterns of argumentation that prevail in the negotiation processes, wind turbines are anchored as an especially worrisome form of energy production that inevitably entails '[...] hazards to our health' (citizens' initiative *Gegenwind Schneifel* 2016). Numerous criticisms are interwoven to establish a hegemonic rejectionist attitude towards wind turbines.

Argumentations concerning economic aspects

Economic aspects are a further area of conflict in the discourses opposing wind power, mentioned by 69% of the citizens' initiatives analysed. Referring to the impaired quality of life for people living in the immediate vicinity of wind turbines, the protest movements criticise the negative impact turbines have on property values. A citizens' initiative from Rhineland-Palatinate emphasises that '[...] wind turbines have a lasting impact on the quality of life in terms of subjective well-being. As a consequence, the market values of properties inevitably fall significantly. In Germany, a loss in value of between 30% and 100% (unsalability) is assumed, depending on the distance to the turbine. [...] Why should young families voluntarily move into the vicinity of a wind turbine and expose themselves to health hazards or other losses?' (citizens' initiative *Niederwallmenach und Umgebung* 2015a). As a consequence, and not merely due to the economic arguments, the citizens' initiatives call for a greater distance between wind turbines and residential areas and/or 'compensation for the decreased property value resulting from the construction of the wind farm' (citizens' initiative *Windkraft Engelsbrand* 2015).

In addition, the negotiation processes concerning the economic consequences of wind power development include concerns about sectoral losses resulting from local wind power planning, especially with largely similar concerns being voiced about falling numbers of visitors or holidaymakers in areas developed for tourism or 'attractive' areas. For example, one citizens' initiative pointedly asked, 'How will we advertise tourism in future? Adventure holidays under wind turbines for people who love to take risks?' Wind turbines are thus located on the outside of 'leisure- and recreation-oriented landscapes': areas where turbines have been installed are understood to have degraded attractiveness and to seem like 'industrial operations' (citizens' initiative *Für Transparenz und Gerechtigkeit* 2016). However, in addition to losses in the tourism sector, some citizens' initiatives also frame zoning for wind power planning as economic competition, since 'the conversion of valuable farmland [...] into wind turbines endangers jobs in the agricultural sector and the security of food and feed supplies' (citizens' initiative *Gegenwind im Oderbruch* 2015; see Weber/Jenal/Kühne 2017 for similar arguments regarding conflicts about raw material extraction).

A further criticism relating to economic conflicts is the profitability of wind turbines and wind farms. The negotiation processes of the citizens' initiatives exhibit serious doubts about the economic viability of wind turbines, especially in southern Germany. The protest movements express doubts about whether wind conditions in southern Germany are sufficient for the profitable operation of wind turbines. In addition, 'many municipalities complain constantly about financial deficits because promised business tax income fails to materialise and they are left to bear other related costs' (citizens' initiative *Windvernunft Kiel e.V.* 2015). According to the citizens' initiatives, whether operating wind turbines brings opportunities or risks for municipalities is 'often not considered by the decision-makers because of the prospect of easy money from supposedly high and guaranteed lease payments. This negligence leads to immense economic damage for the municipalities, damage that the citizens ultimately have to bear' (citizens' initiative *Niederwallmenach und Umgebung* 2015a). Thus, the citizens' initiatives fear financial losses, not only in property values but also at the municipal level. Ultimately, a number of arguments support the positions opposing wind power development as part of the energy transition.

4 Conclusions and outlook

To date, surveys continue to show a high level of fundamental approval for the energy transition in Germany (*Agentur für Erneuerbare Energien* [Renewable Energy Agency] 2015; *BfN* [Federal Agency for Nature Conservation] 2015). At the same time, there is a growing number of reports about resistance to specific plans, particularly plans regarding wind power and expansion of the electrical grid (see also Weber et al. 2017). Certain positions appear to be gaining the upper hand over others, pushing the latter into the background. Whereas criticism of renewable energy development was virtually 'unspeakable' in the immediate aftermath of the Fukushima nuclear disaster, as time goes by it appears that strong criticism is increasingly permissible. Of 280 citizens' initiatives related to wind power development found using Google, 270 take a negative stance and 10 are in favour of wind power to aid the energy transition. Against this backdrop, which key arguments are used by proponents and opponents? For this question, which this article examined from a discourse theory perspective, there were previously no comparable quantitative-qualitative results of such scope.

By subjecting both sides to a more detailed analysis, we have clearly shown that central considerations such as nature conservation, landscape and home, health, and economic aspects can be coupled with patterns of argumentation on both the supporting and opposing sides; they are, according to Laclau (2007), 'floating signifiers'. The supporting side often takes positions that play down those of the opposing side – aspects that have thus far barely been subjected to closer examination and that show the potential of discourse theory analyses: the search for alternative interpretive patterns and interpretations. At the same time, we were able to make further distinctions among established points of criticism. What is striking in this regard is how similarly structured the patterns of argumentation and the discursive settings are across the negotiation processes of the various citizens' initiatives. For

example, 'landscape' is frequently constructed in emotion-based approaches by the citizens' initiatives opposing wind power development as subject to damage or destruction; its current state is to be preserved. Citizens' initiatives refer to and network with one another, (re)producing each other's arguments, and can in combination be designated in terms of discourse theory as discourse coalitions (see Nonhoff 2006). The extent of the development of these coalitions is a subject for further research.

With respect to the discourse theory approach, one should in particular highlight its potential to establish a metaperspective access to language and focus on power structures. The main subjects of this analysis are neither positions of individuals nor structural parameters; the focal plane lies 'in between' these and enables a view of social negotiation processes that, in the case of the citizens' initiatives, show increasing political relevance as some expansion projects are withdrawn against the backdrop of massive protests or as delays of the planning processes 'impend'. For the citizenry, 'landscape' and 'home' serve as important anchor points for orientation. This means that landscape changes become major challenges for policymakers and planners, who need to address the associated fears and worries. An important aspect in this regard is that not all of the citizens' initiatives' argumentation approaches are legally relevant, but they do have considerable everyday relevance. This is exactly what policymakers and planners increasingly have to consider in this context.

In order to also gain more detailed insights into the motivations and actions of both the supporting and opposing protest movements, it would be useful to perform an extensive analysis of their underlying objectives – 'captured' through detailed interviews with representatives of the initiatives. This would enable further delineation of the various discursive settings as well as a more nuanced categorisation of the citizens' initiatives. In the course of the research project carried out for the Federal Agency for Nature Conservation (*Bundesamt für Naturschutz, BfN*), which is the source of the results presented in this article, we are converging on this research gap.

Another key question also remains open: can conflicts, especially those as emotionally fraught as the energy transition, be definitively resolved (see also Becker/Naumann 2016)? According to Ralf Dahrendorf (1972), this is impossible. In line with Dahrendorf, the citizens' initiatives with their fixed and shared attitudes can be described as an organised conflict group confronting policymakers and planners. The conflict has thus manifested itself and is being waged more or less vehemently (see also Aschenbrand/Kühne/Weber 2017; Kühne 2017). Dahrendorf recommends accepting dissent as the normal state of affairs and thus favours *regulating* conflicts; this involves dealing with conflicts by viewing the counterparty not as an illegitimate 'enemy' but as a legitimate 'opponent' with whom one must 'wrestle' over future developments (cf. Mouffe 2007, 2010, 2014 for corresponding arguments). The extent to which the circumstances of civic protest relating to the energy transition can be influenced by conflict *regulation* approaches is a field for further investigation.

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