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Communication approaches of citizen energy cooperatives to increase social acceptance of wind turbines

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Abstract

The expansion path for wind power has been set: two percent of the German federal territory is to be designated for this purpose. Social acceptance of wind turbines is regularly rated as high in surveys. Nevertheless, there is often resistance from the population at a local level, which creates a bad mood and (at least) slows down the construction of the wind turbines. As many thousands more wind turbines will be erected in the coming years, but sites further away from populated areas have already been largely developed for wind power, new areas will increasingly have to be designated closer to people's homes. The call for public participation is getting louder in many places. Citizens' energy cooperatives can be a lever for this. A lack of communication accompanying projects increases local resistance, as people often do not feel involved. This paper examines which communication approaches of community energy cooperatives contribute most to the social acceptance of wind turbines and what the success factors and challenges in communication are. The factors that lead to greater acceptance of wind energy projects are already well researched, above all the (financial) participation of citizens and local municipalities. The role of communication - in particular that of citizens' energy cooperatives - for acceptance has not yet been sufficiently researched. The aim of this study is to contribute to understanding this influence and to formulate success factors in a recommendation for action. To gain this knowledge, 15 expert interviews have been conducted with representatives from community energy cooperatives throughout Germany. Some results: communication must be appropriate for the target group, reach all those affected, correctly capture the situation on the ground and involve local (political) decision-makers. To achieve this, all available communication channels should be used wherever possible, with the main focus on direct communication and press relations. Social media is also playing an increasingly important role. Communication must also be completely transparent, started at an early stage, understandable and should include emotional and visual elements.

Keywords: citizen energy cooperatives, wind power, communication, acceptance, citizen participation

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List of Abbreviations

Abbreviation	Meaning
DGRV	Deutscher Genossenschafts- und Raiffeisenverband e.V.
EEG	Erneuerbare Energien Gesetz
eG	eingetragene Genossenschaft
IAM	Integrated Acceptance Model
IP	Interview Partner
LULU	Locally Undesirable Land Uses
NIABY	Not-In-Any-Backyard
NIMBY	Not-In-My-Backyard
USP	Unique Selling Point
WTG	Wind Turbine Generator

Omissions in quotations have been placed in brackets: (...)

Additions to quotations have been placed in square brackets for better comprehensibility: []

1. Introduction

Europe is to become the first climate-neutral continent by 2050. To achieve this ambitious goal, the European Union has launched the European Green Deal (The European Green Deal, 2019; cited from Hübner et al., 2023, p.1). Wind energy plays a crucial role in the goal of emission-free energy production and ultimately climate neutrality (Intergovernmental Panel on Climate Change (IPCC), 2023; cited from Hübner et al., 2023, p.1). Wind power is the most promising driver of the energy transition. No other renewable energy generation is growing as fast, as cost-effectively and as technologically mature and therefore extremely competitive as wind power (Statistical Review of World Energy, 2024; cited from McKenna et al., 2025, p.2;). In many countries, wind power is the cornerstone of the transformation of energy systems *(Europe - Countries & Regions*, 2023; cited in McKenna et al., 2025, p. 2). The last German government also set ambitious expansion targets. A total of two percent of the country's surface area is to be made available for wind power by 2032 *(Expanding Wind Energy for Germany*, 2022). Last year, the prioritization of wind energy by the old federal government already resulted in a record number of permits and approvals (*2024: Windenergie-Rekordjahr bei Zuschlägen und Genehmigungen*, 2025). This means that the industry has a lot of work to do now and in the coming years. The massive expansion of renewable energies required in the coming years offers great potential for energy cooperatives, as the demand for operator models, which must go hand in hand with public acceptance, will continue to rise with the increasing expansion (Stappel, 2023 , p.26). Even when it came to the Stuttgart 21 infrastructure project, Brettschneider (2012 , p.435) noted that major projects in the transport and energy sectors repeatedly met with great protest from parts of the population . However, it is precisely this local acceptance that will play an immensely important role in successfully achieving the climate-neutral transformation of the energy sector (Hübner et al., 2023, p.1). Of course, the energy transition is not alone in this. The entire transformation in the area of sustainability depends significantly on acceptance and participation in order to ultimately be successful (Laborgne & Radtke, 2023, p.1). Despite the record result in terms of approvals and permits, the energy transition is currently lagging behind the necessary speed. The lack of acceptance among the population is one of the main reasons (Stappel, 2023, p.21), although the acceptance of the energy transition itself among the population is not bad at all: the acceptance of renewable energies, especially wind energy, is generally high, although eastern Germany lags behind the national average (Diermeier & Weisskircher, 2024, p.2; Umfrage Zur Akzeptanz Der Windenergie an Land - Herbst 2023, 2024, p.5). However, protests and

complaints from the public continue to cause delays in approvals and the start of construction. Regulations such as strict distance rules for wind turbines, nature conservation requirements and lengthy approval procedures are also restrictive (Stappel, 2023 , p.21). Energy cooperatives still only account for a small proportion of CO2-neutral energy production, in 2023 they accounted three percent of renewable electricity generation in Germany (Energiegenossenschaften 2024 - Jahresumfrage des DGRV, 2024, p.10). However, because they offer broad sections of the population the opportunity to get actively involved, cooperatives in particular are in a position to make an important contribution to an accepted energy transition. Currently, the question of the pace of the transition to renewables threatens to increasingly divide society (Stappel, 2023, p.5), as wind turbines do have an impact on the local environment and affect residents in the immediate vicinity. Complaints include noise pollution, shadow flicker, blinking night-time identification and changes to the landscape, i.e. a general visual impairment (Hübner, Pohl, Hoen, et al., 2019; Knopper & Ollson, 2011; Pawlaczyk-Łuszczyńska et al., 2018; Pohl et al., 2018, 2021; cited from Hübner et al., 2023, p.2). It will therefore be more important than ever that the expansion of wind power and photovoltaics goes hand in hand with acceptance by the local population (Stappel, 2023, p.5), because compared to conventional power plants, the energy transition is much more decentralized (Stappel, 2023, p.20). It is therefore important for the future to successfully spread and apply the cooperative concept in the energy sector in order to promote decentralized, renewable energy generation and marketing through a cooperative form of organization (Dorniok, 2018, p.211). In addition to the practical implementation of wind energy projects by energy cooperatives - i.e. with a participation option - an important component is the accompanying communication. This paper takes a closer look at the components that make up a successful and acceptance-promoting communication and communication strategy for wind projects by cooperatives and ultimately promote acceptance. The research question for this work is set out in the next section.

1.1. Literature status and research gap

To date, the scientific literature contains good findings on the development and status of citizen energy cooperatives, including figures, data and facts, but these are not recorded according to uniform criteria and are not up to date. In addition, a lot is known about the organization and structure of citizen energy cooperatives. The literature on this comes almost exclusively from German-speaking countries. Success factors for citizen energy cooperatives and guidelines for action have also been researched, but almost nothing has been researched in the area of cooperative communication. The area of acceptance of wind

power is well researched in terms of its characteristics, both nationally and internationally. This includes local concerns, citizen participation, social norms, the role of stakeholders such as local politicians, benefits for communities through participation, how acceptance develops over time, as well as hurdles and influencing factors. Little is known about communication on wind power in particular. The existing literature deals, for example, with media narratives about wind power, nature conservation and the energy transition, as well as resistance to wind power projects on social media. The acceptance of renewable energies in general is also well researched. The literature deals with conflicts, the discrepancy between local resistance and general social support for these technologies, emotions, factors that promote acceptance, the influence of communities and participation. The area of communication on infrastructure projects is also relatively well researched, mainly by communication scientist Frank Brettschneider.

The gap in the research is that little is known about the influence of communication on the acceptance of wind energy projects and the success factors. This perspective is completely lacking from the perspective of cooperatives, which have different requirements in terms of human and financial resources. The topic is therefore particularly important from a practical perspective in order to provide cooperatives with success factors and recommendations for action that make their work easier.

1.2. Research Question

This study is based on the following research question: "Which communication approaches of citizen energy cooperatives contribute most to the social acceptance of wind turbines and what are the success factors and challenges in communications?" The relevance for the research results from the scarcity of literature on the one hand and the needs of energy cooperatives on the other.

1.3. Structure

This paper begins with an overview of the existing scientific literature on citizen energy cooperatives and wind energy projects and the communication of both topics. This is followed by a presentation of important theoretical approaches and studies that are relevant to the topic. This is followed by a description of the research design and methodology before the results of the qualitative expert interviews are presented. In the discussion section, the results are interpreted in the context of the theoretical approaches and the existing literature and the implications for practice and its challenges are discussed.

2. Current Research Status

2.1. Citizen Energy Cooperatives

In cooperatives, citizens can participate directly in renewable energy projects themselves (Kahla et al., 2017, p.6 f.; Müller et al., 2015, p.97) . In citizen energy cooperatives, citizens come together to make a joint investment in energy generation plants (López et al., 2024, p.14) . Energy cooperatives are characterised:

"all such registered cooperatives whose main purpose is to carry out activities in the energy sector - without restriction to certain stages of the value chain, i.e. along the entire value chain."

(Holstenkamp, 2012, p.7)

In the cooperative sector, the central maxim is a highly democratic one: each member has exactly one vote. As the voting right is independent of the amount of the contribution, the influence of members who own more shares is restricted and the democratic principle is thus secured (Staab, 2018, p.19; Yildiz et al., 2015, p.60). To become a member, you buy one or more shares in a cooperative. The energy cooperative has practically no hurdles, as only small financial resources are required for a share. The concept is a liability limited to the membership share combined with low financial entry barriers. This means that energy cooperatives are close to the needs and opportunities of their members (Yildiz et al., 2015; cited in Fischer et al., 2021, p.3). However, how much a share costs varies between cooperatives. In many cases, the minimum participation starts at €100, but €500 or more is also possible (Kahla et al., 2017, p.7). This means that families with lower incomes can also participate in the energy transition. This opportunity for all income levels is reflected in the high membership figures (Viardot, 2013 , p.761).

Energy cooperatives in the broadest sense are not limited to photovoltaic and wind cooperatives but, according to Stappel (2023) , also include bioenergy cooperatives and those that operate cooperatively organized local heating networks. Other related models are timber cooperatives and bioenergy villages (Stappel, 2023, p.19 f.).

By their very nature, energy cooperatives can be classified as community energy (Yildiz et al., 2015; cited in Müller et al., 2015, p.97). However, the field of community energy is broader than the cooperative environment alone and includes any association of private individuals, local businesses,

individual agricultural enterprises or legal entities - with the exception of large corporations - that invest equity capital individually or jointly in (renewable) energy installations. According to Müller et al., 2015, p.97), the prerequisite for a project to be classified as community energy is that the investor consortium holds at least 50 percent of the voting rights and comes from the region in which the plants are/have been built or located. In the literature, the terms "citizen energy company" or "citizen participation company" are not so easy to define. There are many different approaches that are related in their terminology, overlap in their definition and sometimes describe the same social phenomena (Holstenkamp, 2018; quoted from Kahla et al., 2017, p.6). Since the field of research is still relatively young and there are diverse architectures of participation constructs that cannot be categorized in simple schemes, there are a variety of different terms (Holstenkamp, 2018, p.899). In German, combinations with the noun "Bürger" are the most common, which - at least in the recent past and present - tends to indicate a more individualistic view of the participation of individual citizens as opposed to the concept of communities. The English word "citizen" frequently appears in translations of German terms, as does the combination "citizen energy" (Holstenkamp, 2018, p.898). A distinction must also be made between "Bürgerenergiegesellschaft" and "Bürgerenergiegenossenschaft". Although the terms are often used interchangeably in political discussions, they should not be used synonymously. Energy cooperatives are generally eGs "whose main purpose is to carry out activities in the energy sector" (Holstenkamp, 2012, p.7). In economic terms, companies with a different legal form can also be considered as cooperatives. In formal legal terms, the distinction is clearer. Only eGs or, at European level, Societates Europaeae Cooperativae are considered here (Dülfer, 1995; cited from Kahla et al., 2017, p.9). If an international comparison is to be made, a narrow definition of energy cooperatives must be avoided, as this is a mainly German phenomenon. In some countries, there is no specific cooperative legal form (Kahla et al., 2017, p.9).

For citizen energy companies, Kahla et al. (2017, p.6) derive four features from the literature that can be used to characterize them for the most part:

1. Regionality or locality (community of locality)
2. Importance of non-financial objectives (mission-driven; social enterprises)
3. Openness and representativeness
4. Influence of the citizens

A citizens' energy company also includes companies in the legal form of a civil law partnership (GbR) or a limited liability company and limited partnership (GmbH & Co. KG) (Holstenkamp, 2012, p.10). In 2016, the ratio of GmbH & Co. KGs and eGs that are active in the wind sector - with 54.6 percent cooperatives - was roughly equal (Kahla et al., 2017, p.15). In order to conclusively identify the characteristics of a citizen energy cooperative, the characteristics of citizen energy companies must be compared with the seven cooperative principles established at international level (Holstenkamp, 2012, p.10):

1. Voluntary and Open Membership
2. Democratic Member Control
3. Member Economic Participation
4. Autonomy and Independence
5. Education, Training and Information
6. Co-operation among Co-operatives
7. Concern for Community

If an eG carries out its activities along the energy value chain, it can be classified as an energy cooperative (Holstenkamp, 2012, p.10).

As of December 31, 2023, the DGRV counts 951 energy cooperatives in Germany **(Fig. 1)**, the majority of which are relatively small cooperatives - with an average of 379 members (Energiegenossenschaften 2024 - Jahresumfrage Des DGRV, 2024, p.3), which are run entirely on a voluntary basis (Müller et al., 2015 ; cited from Brummer, 2018, p.112). There are also three large nationwide energy cooperatives, which accounted for around 35 percent of all members in 2015 (Fischer et al., 2021 , p.3). The three large ones are Greenpeace Energy eG (now Greenplanet Energy eG), Elektrizitätswerke Schönau eG and

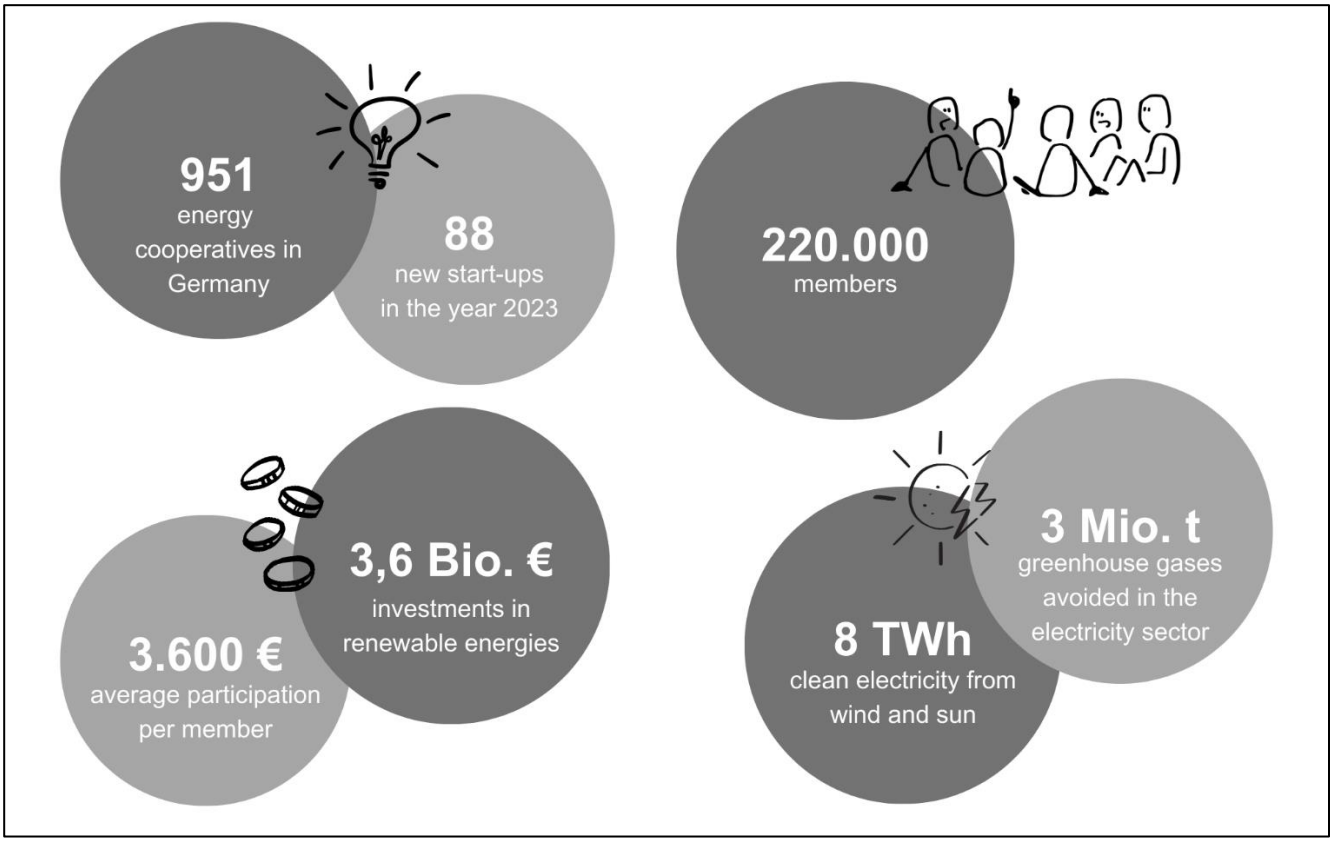


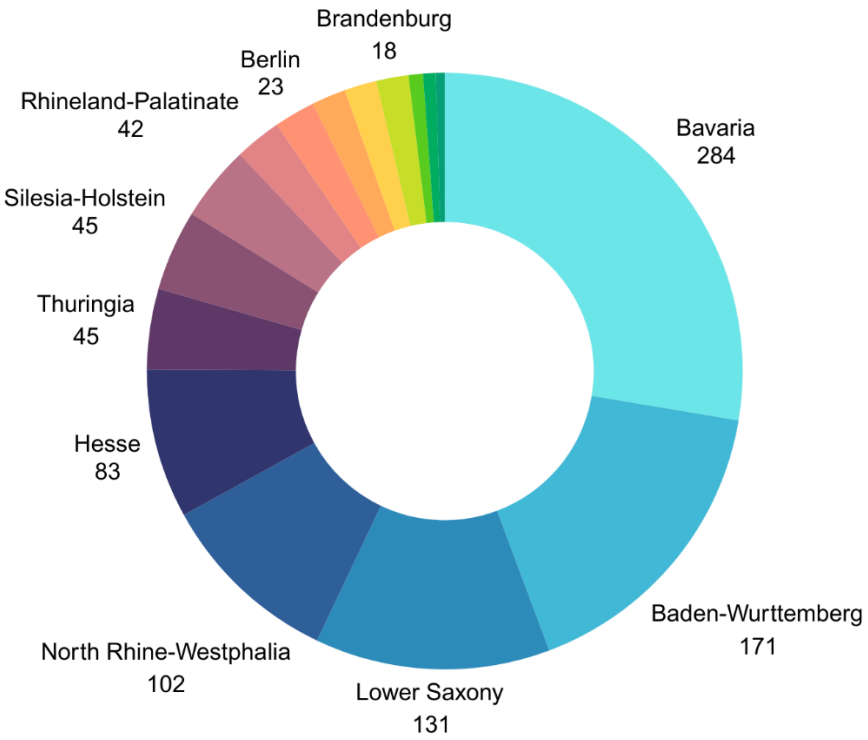
Fig. 1: Figures and data on energy cooperatives in Germany as at 31 December 2023 according to the DGRV (own illustration).

Prokon Regenerative Energien eG. Due to their supra-regional significance, their membership is not limited to one region. In addition, there is Bürgerwerke eG, which serves as an umbrella organization for citizen energy companies and predominantly citizen energy cooperatives throughout Germany (Kahla et al., 2017, p.8) and acts as a network partner *(Bürgerwerke - Über Uns*, n.d.) .

There is no consensus in the literature on the exact number of energy cooperatives. Stappel (2023, p.15) arrives at a figure of 883 water and energy cooperatives in Germany for 2022 with a combined turnover of almost EUR 1.2 billion. Kahla et al. (2017, p.25) cite 1,024 registered energy cooperatives as at 31.12.2016. Staab (2018, p.19) remains vague and counts around 1,000 energy cooperatives at the end of 2016. At the end of 2014, Staab (2018, p.19) had already identified more than 900 energy cooperatives. At that time, they had around 136,000 members with a total investment of around €1.2 billion. In 2008, there were only 147 citizen energy cooperatives, which meant a sharp increase in the following years (Kahla et al., 2017, p.26). If one disregards waves of foundation and dissolution, a steady

increase in the number of citizens' energy cooperatives - which do not only include eGs - can be seen in Germany since 1995 (Kahla et al., 2017, p.13).

A clear east-west and north-south divide can be seen in the distribution of energy cooperatives. While eastern Germany does not play a major role in terms of numbers of energy cooperatives as of 2016 (Kahla et al., 2017, p.21), there is a concentration in Baden-Württemberg, Bavaria, Lower Saxony and North Rhine-Westphalia. As of 2016, these four federal states accounted for around two thirds of all energy cooperatives. Ultimately, however, these four are also the most populous federal states (Kahla et al., 2017, p.29) **(Fig. 2)**.



Bavaria	284
Baden-Wurttemberg	171
Lower Saxony	131
North Rhine-Westphalia	102
Hesse	83
Thuringia	45
Silesia-Holstein	45
Rhineland-Palatinate	42
Saxonia	26
Berlin	23
Saxony-Anhalt	19
Mecklenburg-Western Pomerania	18
Brandenburg	18
Saarland	8
Bremen	7
Hamburg	5

Fig. 2: Distribution of energy cooperatives across federal states based on data from the energy cooperatives database according to Kahla et al. (2017) (own illustration)

Looking beyond the borders of Germany, REScoop.eu - the European Federation of Energy Communities - is a growing network of 2,250 energy communities across Europe with around 1,500,000 citizens who are actively involved in the energy transition (*REScoop*, 2024).

Only very few of the 1,000 or so cooperatives are active in the field of wind power. In its 2024 annual survey as of December 31, 2023, the DGRV's Federal Office for Energy Cooperatives shows that 17% of

cooperatives are active in the field of wind power generation. Converted, this corresponds to around 160 cooperatives (Energiegenossenschaften 2024 - Jahresumfrage Des DGRV, 2024, p.8) . In 2016, there were only 112 cooperatives (Kahla et al., 2017 , p. 29). In the years before that, there were even fewer. Holstenkamp & Degenhart (2014) identified a total of 74 cooperatives active in the wind energy sector. The north-south divide is also evident here, with 26 cooperatives in Bavaria, 10 in Baden-Württemberg and also ten in Hesse. In the windy north, such as Schleswig-Holstein and Lower Saxony, there are only twelve wind cooperatives, this is especially striking if compared to the total installed capacity of wind turbines (Holstenkamp & Degenhart, 2014, p.189 f.), which is a lot higher as in the south. The reasons for the low level of activity can be seen (Holstenkamp & Degenhart, 2014) in the significantly greater planning effort of wind energy, which is why many energy cooperatives initially started with the construction of photovoltaic systems. Already in 2014, an increase in cooperative activities in the wind energy sector was anticipated for the following years Holstenkamp & Degenhart (2014 , p.190). In contrast to traditional cooperatives, community wind farms structured as GmbH & Co. KG play a significant role in the onshore wind segment, alongside major cooperatives such as EWS Schönau, Greenplanet Energy, Prokon, Albwerk, and TEN. (Kahla et al., 2017 , p.5).

2.1.1. History and Development

The concept of energy cooperatives is not a new phenomenon. Numerous cooperatives were founded in Germany as early as the beginning of the 20th century (Flieger, 2012; Holstenkamp, 2012; cited in Müller et al., 2015, p.96). Müller et al. (2015 , p.96) speak of around 6,000 cooperatives that were significantly involved in the electrification of rural areas in the last century - also in other countries (Bauwens, 2013; cited in Holstenkamp & Degenhart, 2014, p.188), as large energy suppliers did not serve them (Stappel, 2023, p.18). In many cases, this was due to the enormous investments required. Private investors and public actors shied away from the risk associated with this task (Flieger, 2012; Holstenkamp, 2012; cited in Müller et al., 2015, p.96). A few cooperatives in the legal form of the eG, which were then known as “Überlandzentralen”, still date from this period (Stappel, 2023, p.18). In addition to the electrification of rural areas, energy cooperatives played and still play an important role, namely the implementation of cooperative projects, in the field of renewable energies. Cooperatives acted as a control center to bring together sufficient capital for the implementation of projects.

Nowadays, energy cooperatives are also mainly aimed at the generation and distribution of renewable energy (Stappel, 2023, p.18). This started in some European countries in the 1980s and 1990s

(Holstenkamp & Degenhart, 2014, p.186). However, the approach of involving citizens from the neighbourhood of the plants through the cooperative model of citizen participation has only played an increasingly important role in the recent past (Bauwens, 2013; cited in Holstenkamp & Degenhart, 2014, p.188).

Energy cooperatives, as they are known today, were mainly founded after the turn of the millennium. 1,100 new renewable energy cooperatives have been founded in Germany since 2006 (Stappel, 2023, p.21). The number of cooperatives in Germany has been rising steadily at the latest since the Cooperatives Act was amended in 2007 to make it easier to set up a cooperative (Kahla et al., 2017, p.15). The subsequent start-up initiative of the cooperative auditing associations and the Erneuerbare Energien Gesetz also led to a sharp increase in the number of cooperatives founded between 2008 and 2015 (Stappel, 2023, p.5). In particular, the EEG guaranteed cooperatives that set up photovoltaic systems a guaranteed feed-in tariff for the electricity produced. In 2010 alone, 132 energy cooperatives were founded (Stappel, 2023, p.39). For the entire period from 2008 to 2015, Stappel (2023, p.5) records a total of almost 900 start-ups of energy cooperatives. The wave of start-ups peaked in 2011. Since then, new entries in the registers of cooperatives have been decreasing (Müller & Holstenkamp, 2015, p.5). Just as quickly as the boom in energy cooperatives had started, it declined again. Reasons for this are changes in the funding system, an amendment to the EEG, capital market regulation, a lack of full-time staff and commitment, transformation of business models, financing problems and market saturation, the wave of new start-ups among energy cooperatives then ebbed again (Müller et al., 2015, p.98; Stappel, 2023, p.5). As a result, many energy cooperatives stopped accepting new members due to a lack of economically viable new projects for energy plants and the postponement of already planned projects (Müller et al., 2015, p.98). With only four newly founded energy cooperatives in 2020, the sector reached a negative record. Since then, the number of new start-ups has risen again. There were founded 16 in 2021 and 42 the following year. 30 more were founded in the first half of 2023 alone (Stappel, 2023, p.5). This increase is already seen by some as the start of another start-up boom, as the conditions for new growth are currently good. This is due to the now firmly established cooperative model, which is accompanied by professional support from the auditing associations and the Bundesgeschäftsstelle Energiegenossenschaften. Good cooperation with cooperative banks also plays its part (Stappel, 2023, p.23). For further growth, Fischer et al. (2021, p.1) see the lack of awareness outside the cooperative field and its members as a limiting factor. Nevertheless, although

not all of the conditions are in place for the development of efficient structures in which energy cooperatives can take full advantage of their USP, Stappel (2023, p.21) sees the development so far as a success story.

2.1.2. Significance

In Germany, citizen energy cooperatives play a key role when it comes to the participation of citizens in local energy projects. As an organization with voluntary commitment, they are a symbol of the energy transition in the hands of citizens in the public perception (Müller et al., 2015, p.96) and form a counter-movement to large companies whose main concern is to maximize their profits (Kahla et al., 2017, p.24). Energy cooperatives are therefore more than just an association of (small) investors with a profit motive. They also offer a wide range of social benefits and pave the way for a socially responsible energy transition (Müller et al., 2015, p.98). In a sense, energy cooperatives are therefore social investments or venture philanthropy. Empirical studies show that for the majority of new energy cooperatives, ecological motives and the goal of helping to shape the energy transition are more important than the profit motive (Bauwens, 2013; Volz, 2011; cited from Holstenkamp & Degenhart, 2014, p.189).

Although the number of cooperatives, their members and investment are constantly increasing, energy cooperatives still only make up a small proportion of the energy sector (Fischer et al., 2021, p.3 ; Yildiz et al., 2015 ; cited from Kalkbrenner & Roosen, 2016, p.60). Nevertheless, the Bundesgeschäftsstelle Energiegenossenschaften of the DGRV (2024) considers energy cooperatives to be of factual and non-material importance for the energy transition. Although they only account for a small proportion of electricity production from renewables, as a survey by the DGRV showed for 2023 - a value of 8 terawatt hours, which corresponds to a share of 3.1% of total electricity production from renewable energies (own calculation), the good level of organization ensures that energy cooperatives have an above-average communicative presence (Kahla et al., 2017, p.24).

In total, renewable energies produced approx. 260 TWh in 2023 (*Öffentliche Stromerzeugung 2023*, 2024). Production by energy cooperatives amounted to significantly less at 8 TWh and the investment volume of EUR 3.6 billion required for this in 2023, is only impressive against the backdrop of 220,000 cooperative members. In many other countries, however, the concept of energy cooperatives remains a niche topic (Fischer et al., 2021). Stappel (2023, p.24), however, ascribes increasing importance to

energy cooperatives for the energy transition due to the very ambitious expansion targets set by the German government for the coming years.

Despite their small overall contribution to renewable electricity production, energy cooperatives have many more advantages and are more important for the energy transition. They enable citizens to participate actively and financially in the energy transition. Through the General Assembly, the supervisory board or the (honorary) board of directors, they have the right to a say and opportunities to shape the company as owners. They also have the opportunity to generate renewable energy together - even for those who lack individual prerequisites such as technical knowledge, bureaucratic insight, funding opportunities or a suitable roof for photovoltaics. Personal contribution can help to reduce costs. At the same time, such models promote the acceptance of renewable energy systems among the population, strengthen regional value creation and support decentralized economic structures (Stappel, 2023, p.20).

The big difference of energy cooperatives lies in the completely different structure compared to the fossil (and nuclear) energy industry. In recent years, energy cooperatives have formed a counterbalance to the energy supply and generation sector (Stappel, 2023, p.20), which in the past and today is still almost completely dominated by these corporations . Also Krug & Di Nucci (2020; cited after Maleki-Dizaji et al., 2020, p.3) see a main problem of declining acceptance in many European countries in the population for renewable energies, especially for onshore wind turbines and onshore photovoltaic systems, by commercial, external developers and established energy suppliers who are not locally rooted and dominate the market. Due to the lack of a local connection, the concerns and interests of the people for whom a plant is "on their doorstep" are usually not adequately taken into account. Energy cooperatives, on the other hand, can score points through the active involvement of local people, benefit sharing, local value creation or solutions oriented towards the common good (Krug & Di Nucci, 2020; cited in Maleki-Dizaji et al., 2020, p.3; Stappel, 2023, p.24) .

2.1.3. Communication

The area of communication by community energy cooperatives has not been well researched to date and has received little attention in the literature. There is also no scientific work that confirms this. The aim of Lautermann et al. (2016) is to focus the communication of energy cooperatives on the acquisition of members. In their recommendation for action for citizen energy cooperatives, they consider

awareness of the target group to be important for a targeted communication and marketing strategy in order to effectively communicate the advantages of membership and reduce barriers that speak against participation. A variety of communication and marketing channels are suitable for this. First of all, it is important to address the own members and their direct environment, for example via newsletters or at the General Assembly. Additional contributors can be recruited i.e. via the website. Publications in local newsletters and events such as lectures and discussions are also helpful, as are excursions and participation in events and trade fairs organized by other stakeholders from the local area, as well as public meetings in cooperation with local authorities to increase the visibility and presence of the energy cooperative. Information stands in the pedestrian zone or at markets are important for direct contact with potential new members. Last but not least, actively writing to and approaching clubs, associations, authorities and other organizations can also help. Student projects in cooperation with universities, on the other hand, can reach a younger target group in particular (Lautermann et al., 2016, p.69 f.). Social media is a good way to draw attention to cooperatives and their activities. For example, if an energy cooperative is located in an urban environment. Lautermann et al. (2016) see the use of social media as less effective in rural areas. He recommends measuring the effort required for this area of public relations work sensibly and in line with the target group and planning the introduction carefully (Lautermann et al., 2016, p.118). In the cooperative sector - at least as far as the 300 largest cooperatives worldwide are concerned - social media is used, but they are so-called "late adopters" and therefore used this communication channel quite late compared to stock corporations, for example (Frey, 2014; cited in Peter & Jungmeister, 2017, p.135). However, the area of social media use, like the area of digitalization in cooperatives, is largely unexplored and scientific publications are rare (Peter & Jungmeister, 2017, p.134 f.).

In their recommendation for action, Lautermann et al. (2016, p.63) point out that the areas of public relations and marketing in a cooperative should be the direct responsibility of the management board and/or supervisory board. IT, media and press relations can also be managed by a volunteer team around the management board. The organization of events can also be spread over many shoulders (Lautermann et al., 2016, p.64) .

Keeping members informed through targeted communication is extremely important for a cooperative. Members should be kept constantly up to date on which projects are being financed with their money, what the cooperative's strategy is, how it is aligned and what portfolio it offers. In a survey, Theurl and

Kleene (2018) found that the provision of comprehensive information is very important to members. Almost 95% of the members surveyed stated that it is important to them to be informed about the energy projects of the energy cooperative. At the same time, more than half said that they were specifically researching current energy projects. The survey in the cooperative concerned also showed that there is still room for improvement in the one or other area. Only 60.3% of members were satisfied with the way their energy cooperative communicated with them (Theurl & Kleene, 2018; cited from Holstenkamp, 2018, p.255).

Young people, women, non-binary people and people on low incomes in particular sometimes feel less attracted to community energy cooperatives. Primarily men, older and academically educated people actually participate (Radtke & Bohn, 2023, p.11).

2.2. Wind Energy

According to (Petrova, 2016), wind energy is a crucial factor in mitigating climate change, provides numerous new jobs in the labour market and is crucial for electricity production (Petrova, 2016, p.1280). The share of wind power in electricity production has not only been rising steadily for several years **(Fig. 3)**, but was also by far the most important source of electricity in Germany in 2023 with 139.8 TWh or 32 percent and in 2024 with 136.4 TWh or 33 percent (*Öffentliche Stromerzeugung 2023*, 2024).

Nevertheless, the expansion fell short of the necessary expansion path in both years. The reason for this, particularly in the offshore sector, are the necessary tenders and the long construction period *(Öffentliche Stromerzeugung 2023*, 2024). While the tendering situation and the long period from the start of planning to the final construction are already a slowing factor in general, it is even more energy-sapping for community energy cooperatives compared to conventional project developers. Large investment sums, bureaucratic hurdles as well as construction and operation are no easy undertaking for cooperatives. Just being able to keep up with conventional competitors in the tendering process - which already costs a lot of money - and the uncertainty of ultimately not being awarded the contract

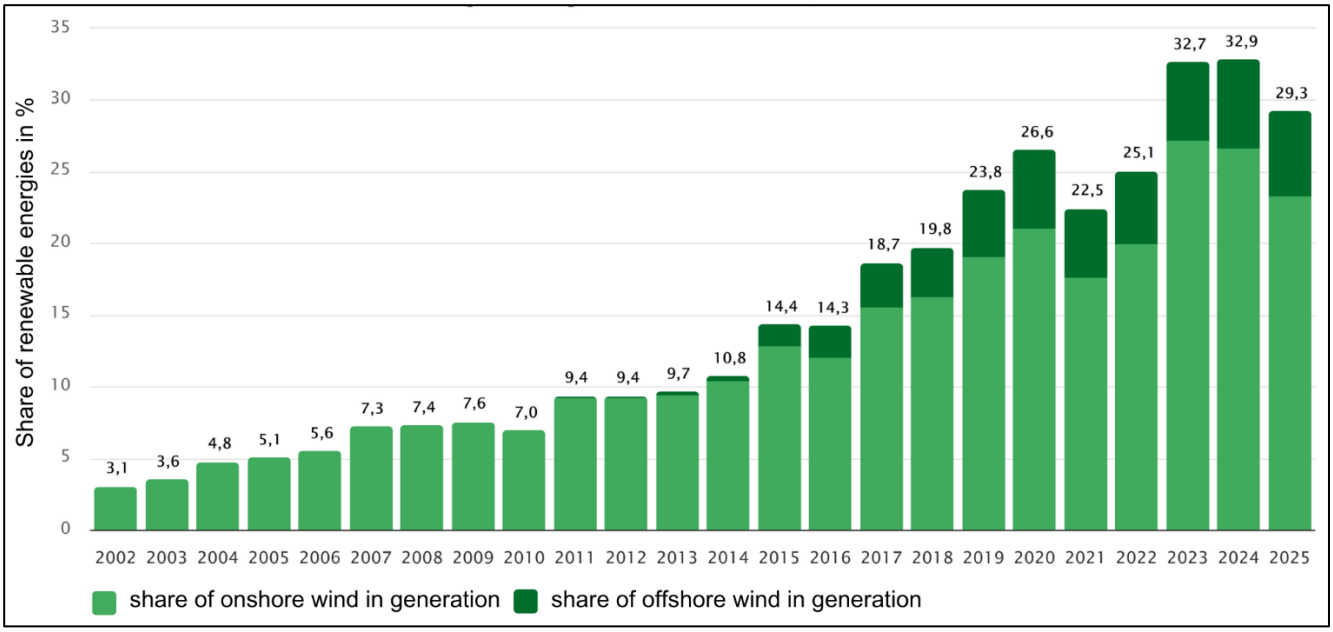


Fig. 3: Annual share of wind energy in net public electricity generation and load in Germany according to energy-charts.info (own translation)

despite all the work is a stumbling block for many cooperatives, so that it often remains nothing more than an idea. Two scenarios have therefore proven to be promising for cooperatives. One option is to participate in wind farms that are planned by other, non-cooperative companies so that they do not have to bear the costs and risks alone. The other option, especially for wind cooperatives, is to get companies, municipalities, local credit institutions, associations or farmers on board with the cooperative in order to be more effective. Furthermore, smaller wind turbines or standalone wind turbines offer potential for operation by a cooperative (Stappel, 2023, p.19).

Thanks to an amendment to the EEG in 2023, there is now also start-up aid for wind projects planned by citizens in order to reduce the aforementioned hurdles, especially in the tendering process. Up to 70 percent of the planning and approval costs for onshore wind turbines are eligible for federal funding up to a maximum of EUR 200,000. In addition, the new regulation makes it easier to construct photovoltaic projects with an installed capacity of up to six MW or 18 MW for wind outside of the regular EEG tenders (*Fortschritte und vertane Chancen im EEG 2023*, 2022).

However, in addition to the financial and formal obstacles, public acceptance of wind power is another barrier for the industry (Kimm, 2017; cited in Karakislak & Schneider, 2023, p.1). Several wind energy projects face local resistance and opposition, resulting in delays or, in some cases, the complete

cancellation of the project (Langer et al., 2017; Reusswig et al., 2016; Zoellner et al., 2008; cited from Karakislak & Schneider, 2023). However, these barriers can be overcome through citizen energy cooperatives and thus through uncomplicated participation in the local energy transition by actively involving people from the region (Stappel, 2023, p.19).

2.2.1. Communication

Communicating about wind energy projects is a major challenge for communicators, as being against wind power is a mainstream phenomenon rooted in the general mindset of the population (Winter et al., 2024). In order to raise awareness of wind power, communication with all stakeholders must therefore be strengthened (Langer et al., 2018). For example, the frame to communicate the benefits to communities in the case of offshore wind turbines resulted in most people being in favour of the project (B. J. A. Walker et al., 2014, p.50). Karakislak & Schneider (2023, p.8) found in a study that almost all respondents considered the communication accompanying the project to be essential. In addition to the communication content itself, the right time, the type of communication and the originator are important.

In order to prevent those affected from "feeling left out" of the project, it is important to communicate with people at an early stage to give them the feeling that they are involved and not unable to act (Karakislak & Schneider, 2023, p.8). Early information and comprehensive communication are also described by Renn (2015) - in connection with renewable energies - as being desired by people, especially when they are strongly affected. Starting communication at the right time is therefore crucial and can be decisive for the subsequent planning and construction process (Renn, 2015; cited from Karakislak & Schneider, 2023, p.9). If the local population feels well informed and included, enthusiasm for a wind power project can be generated and others will follow suit (Maleki-Dizaji et al., 2020, p.17). In this context, the mood in the community also has a positive effect: the more positive it is perceived to be, the higher the level of acceptance (Hübner et al., 2020, p.67). However, in order to prevent those affected from asking more questions than are answered, it is important to consider whether there is even enough information that is worth communicating. However, many parameters are often unclear at the beginning of a project. Information is withheld to prevent misunderstandings, premature conclusions and imponderables. Those involved then quickly have the feeling that there is something to hide. Communicators are therefore faced with a dilemma and must proceed in a planned manner. Information should therefore be passed on when there is still plenty of scope for elaboration, but not

too early if there are no concrete plans for the location or project details. A good way to deal with this dichotomy is to communicate when local people can expect to receive which information. It is therefore important to explain the entire process of the project. Coherence, reliability and transparency in the flow of information, as well as objectivity, are therefore of particular importance throughout the planning process (Hübner et al., 2019, p. 13; Karakislak & Schneider, 2023, p.9; Maleki-Dizaji et al., 2020, p.12). Maleki-Dizaji et al. (2020, p.17) also see it as the duty of politicians to demand the provision of clear information by wind energy developers and to make this a prerequisite for the granting of permits for development.

True transparency in communication means providing clear information about the impacts, benefits and costs of wind energy and must cover the individual steps in the entire planning and construction process (Maleki-Dizaji et al., 2020, p.12). Maleki-Dizaji et al. (2020) also believe that the success of transparent communication requires an early start at the beginning of the project planning process. If communication is not proactive and transparent, project planners create new obstacles for themselves (Maleki-Dizaji et al., 2020, p.13). In a project examined in Thuringia, the availability and provision of detailed and objective information about wind farms formed a central and intrinsically important basis. In a study project examined Gran Canaria, it was even named as the most important driver (Maleki-Dizaji et al., 2020, p.12). There are various methods that have proven to be suitable for creating this transparency (Maleki-Dizaji et al., 2020, p.18).

In Denmark, wind energy projects are typically guided by national regulations that follow a standardized, top-down approach, leaving little room for local adaptation or involvement (Anker & Jørgensen, 2015; cited from Borch et al., 2020, p.2). This includes very conventional communication measures and participation concepts. In this context, it is the authorities who initiate contact with citizens through conventional channels like public hearings, informational mailings, and discussions in local media. For some time now, however, modern communication channels have also been playing an increasingly important role. It is therefore advisable to use social media, emails, websites and blogs in order to communicate with the target group and get people involved. Comprehensive communication therefore requires both: Traditional established (mass) media, direct exchange and information formats as well as the digital space of social media. All create spaces for a dialog in which positions can be argued and disputed (Borch et al., 2020, p.2). Hübner et al. (2019, p.40) also bring round tables, planning cells, scenario workshops or citizens' councils into play as communication instruments.

Social media should be explicitly highlighted here, as they are a powerful communication tool because they are universally applicable and easily accessible (Borch et al., 2020, p.1). Borch et al. (2020) attribute a potentially great influence on the implementation of wind energy projects to social media. The importance of using social media, is also underlined by not leaving this communication channel to wind power opponents, who can have a major influence on projects (Borch et al., 2020, p.2). In a local project in Baden-Württemberg, for example, it was found that opponents not only made their presence felt through campaigns in the traditional media, but also mobilized on social media. The power of social media should therefore not be underestimated (Reusswig et al., 2016; cited in Borch et al., 2020, p.2). If wind power developers underestimate or ignore the concerns expressed in the digital space, it is to be expected that the debate and the views of a few will develop into a common sense. Silence is seen as consent and leads many to falsely assume that everyone agrees with the opinion of the vocal minority. It is therefore advisable to have an open debate about the development of local wind energy projects on social media instead of being afraid of it. This provides an opportunity to reach a negotiated agreement from all sides that represents the entire citizenry and creates an engaged environment (Barry & Ellis, 2010; cited from Borch et al., 2020, p.9). One possible media strategy that some wind turbine developers have developed is to identify and support "champions" from the local community. This has the potential to create acceptance through more organic social interactions locally (Lantz & Flowers, 2010; cited in Borch et al., 2020, p.2).

Simpler information seems better for many in wind power communication at first, as complex information brings with it important communication challenges (Richards et al., 2013, p.432). It is therefore not uncommon for misinformation to be circulating in the wind power discourse, which needs to be neutralized through debunking or myth-busting campaigns (van der Linden, 2022; cited from Winter et al., 2024, p.9). Such communication strategies are particularly effective with the large and undecided majority of people (Winter et al., 2024, p.9). Such information campaigns are more effective when paired with efforts that acknowledge, address, or help to counter the underlying worldviews that make individuals susceptible to misinformation about wind farms (Hornsey & Fielding, 2017; cited from Winter et al., 2024, p.9). For example, there are various approaches in climate communication that reconcile climate action with conservative values or emphasize the results of climate action, which are attractive to supporters of the market economy (Campbell & Kay, 2014 ; Feygina et al., 2010; cited in Winter et al., 2024, p.9). One proposed approach to easing polarized views involves incorporating

rhetorical elements that provoke internal reflection—such as prompting audiences to consider alternative solutions—which can soften the firmness of their existing beliefs (Sassenberg & Winter, 2024; cited in Winter et al., 2024, p.9 f.). Furthermore, the positive or beneficial aspects of renewables - or in this case wind power - should be emphasized in communication instead of focusing on the negative (Hübner, 2020, p.69). Winter et al. (2024, p.10) see the development and application of these communication strategies as a crucial building block on the complex path to a decarbonized system.

For the narrative of a sustainable energy supply, Grünwald et al. (2024, p.32 f.) suggest presenting the path to the goal of a complete phase-out of fossil fuels in such a way that everything is formulated positively, from the accelerated phase-out of coal, to massively subsidized renewables that ensure security of supply, accompanied by the high approval ratings for the energy transition among the population, which have been further increased by the involvement and participation of the people. In a working report by the Otto Brenner Foundation on media narratives about wind power, recommendations are made for reporting journalists on how to better represent wind power projects, that could be applied for the communication on wind energy projects of energy cooperations as well. Whenever writing about the impact of wind turbines on humans and animals, the scientific consensus on the consequences of climate change should be made clear as an overarching framework (1), and the historical and social background to the necessary upheaval in the energy sector should be mentioned (2). It should be communicated in an understandable way with a consideration of the advantages and disadvantages of wind power (3), experts and scientists should be consulted on complex issues (4), cultural backgrounds should be integrated and reflected (5), narratives about all possible stakeholders should be presented in a stringent, factual and scientifically precise manner (6), non-factual or unverifiable statements should be handled with care (7). There should be an honest handling of uncertainties and a thin data situation for some aspects of wind power (8) and it should be made clear that the transition to and establishment of wind power means a social process in the debate (9) (Banita, 2023, p.69). Communication on the energy transition should also use positive emotions, even if it is unsuitable for generating these alone (Hübner, 2020, p.70).

2.2.2. Acceptance

The area of wind power acceptance is generally a well-researched field with abundant literature (Bessette & Crawford, 2022 ; cited from Klok et al., 2023, p.1) .

Wind power in general enjoys high approval ratings in opinion polls. However, due to the lack of social acceptance at a local level, there are problems with the implementation of the expansion of renewables and wind power in particular. So when it comes to a specific project at the local level, general approval regularly turns into resistance (Bolsen & Cook, 2008; Devine-Wright, 2005; Enevoldsen & Sovacool, 2016; Gross, 2022; Johansson & Laike, 2007; Meyerhoff et al, 2010; Rand & Hoen, 2017 ; cited from Klok et al, 2023, p.1; Holtkamp, 2018; cited from Laborgne & Radtke, 2023, p.4) . Acceptance and support from local people is essential in order to achieve the transition of the energy system (Kalkbrenner & Roosen, 2016, p.60) . The ongoing expansion of wind power presents a trade-off between the benefits to society as a whole and the local impacts such as landscape degradation, noise, shadow flicker and impacts on birds and other wildlife and ecosystems, negative impacts on recreation, tourism and, last but not least, loss of land and property values for local people (Petrova, 2016 ; cited from Maleki-Dizaji et al, 2020, p.3 ; García et al., 2016, p.166). This visual impairment of the landscape is seen as one of the main reasons for resistance from the population. (e.g. Fast et al., 2016; Petrova, 2016; Scherhaufer et al., 2017; Wolsink, 2018) . A higher level of acceptance can be achieved if the wind turbines are placed far away from populated areas and the number of turbines is not so high (Molnarova et al., 2012; cited in McKenna et al., 2025, p.5). While the benefits to society as a whole may outweigh the impacts locally, wind energy development plans are regularly overturned due to local opposition (García et al., 2016, p.166). A perceived lack of fairness in decision-making processes or the distribution of costs and benefits, along with limited opportunities for public involvement, can negatively affect acceptance (Petrova, 2016 ; cited from Maleki-Dizaji et al., 2020, p.3). Maleki-Dizaji et al, 2020 find that "Community acceptance of wind farms has become a critical bottleneck" (Maleki-Dizaji et al., 2020, p.1). It is no coincidence that the last German government enshrined the overriding public interest in the expansion of renewable energies and their contribution to public safety in law with Section 2 EEG 2023, which came into force in mid-2022 (Sailer & Militz, 2023, p.2). As many sites away from settlements and populated areas have already been planned and realized, the further expansion of wind energy will increasingly affect the proximity to settlements. García et al. (2016) state that this will make local resistance an even greater challenge than it already is today (García et al., 2016, p.166).

As such, people's acceptance of local wind power projects should not be regarded as static. Instead, a pattern emerges in the form of a U-curve, which leads from high acceptance to (relatively) low

acceptance during the siting phase (generally still positive on average) and back to higher acceptance once a project is in operation (Wolsink, 2007; cited from Wüstenhagen et al., 2007, p.2685). Several studies also report a reduced perception of noise pollution and a more positive attitude towards the landscape after the project has been built. Negative expectations, it is concluded, are therefore not fulfilled (Eltham et al., 2008; Fergen & B. Jacquet, 2016; Warren et al., 2005; Wilson & Dyke, 2016 ; cited from Hübner et al., 2023, p.2) .

Karakislak & Schneider (2023) identify four key factors that shape the dynamics of local acceptance or rejection: the stance of the mayor and municipal council regarding the project; the role of other relevant stakeholders such as project developers and opposition groups; the quality of project communication, transparency, and the overall process; as well as external influences arising from specific events (Karakislak & Schneider, 2023 , p.8).

Mayors and local councillors are important players who combine political power, social resources and a strong sense of belonging to their community. They can play a supporting, moderating, escalating or mediating role in siting decisions for wind energy. Local politicians thus have a significant influence on the dynamics of wind energy project acceptance in the community and public trust in local decision-makers also affects the acceptance of wind energy projects (Fast & Mabee, 2015; Titov et al., 2021; cited in Karakislak & Schneider, 2023, p.3). Karakislak & Schneider (2023) specifically emphasize the decisive role of the mayor in implementing the energy transition locally (Beermann, 2009; Young & Brans, 2017, cited in Karakislak & Schneider, 2023, p.2). Hübner et al. (2019) also emphasize the important role that mayors have in building acceptance and trust in connection with renewable energy projects (Hübner, Pohl, Warode, et al., 2019, p.43).

In order to achieve a high level of acceptance and willingness to support community energy projects, there must ultimately be trust and a sense of a community working together to achieve something (G. Walker et al., 2010, p.2655 ff.). In order to solve the problems with acceptance, people must also be involved right from the planning phase and opportunities for financial participation must be identified (Brummer, 2018; cited in McKenna et al., 2025, p.6). Preventive education through information and explanations can also reduce people's susceptibility to disinformation and belief in conspiracies. This can increase the acceptance of wind energy. However, if these beliefs are deeply rooted in people, it

will be difficult to change their opinions (Benegal & Scruggs, 2024; Gupta et al., 2023; Liebe & Dobers, 2019; Winter et al., 2022 ; cited in McKenna et al., 2025, p.9).

Despite the widespread support for renewable energies, positive emotions in relation to the energy transition are rather rare. Emotions provide a crucial insight into how people evaluate the energy transition, but emotional influences are often ignored in the face of rational arguments. Experiences with renewable energy projects are both cognitive and emotional. The more positive the perception, the greater the acceptance; the more negative, the greater the rejection. However, acceptance can be ambivalent - people can appreciate the benefits of climate protection and at the same time have concerns about changes to the landscape (Hübner, 2020, p.54 ff.). Psychological research suggests that losses outweigh gains, which explains why opponents are more active than supporters (Kahneman & Tversky, 1979; cited in Hübner, 2020, p.58). While opposition is strongly associated with negative emotions, support tends to be more of a cognitive matter that lacks emotional engagement (Pohl et al., 2018; Hübner et al., 2019; cited in Hübner, 2020, p.61). The absence of positive emotions among supporters can reduce their motivation to actively support renewable energy (Hübner, 2020, p.61). For example, Hübner et al. (2019) found that 55 per cent of respondents were in favour of building wind turbines, but only 20 per cent were in support of these turbines, while 4 per cent were against them, but 80 per cent of them actively opposed them Hübner et al., 2019, p.20). Furthermore, negative emotions are intensified when there is mistrust in planning processes, the perception of supposedly unfair procedures or one-sided information. Creating acceptance requires not only factual information, but also an emotional debate. Linking the energy transition with positive emotions through participatory processes can promote stronger identification with its goals. Without meaningful local participation, acceptance can remain fragile (Hübner, 2020, p.69 f.).

2.3. Communication of Infrastructure Projects

Resistance to infrastructure projects regularly arises from the population. This affects projects in the fields of energy, transport and urban development. Not infrequently, they even lead to referendums and bring a project to an end. NIMBYism, project-related reasons, hidden reasons, loss of trust and, last but not least, poor communication are the many reasons (Brettschneider, 2018, p.97). For large infrastructure projects, the maxim must therefore be "legitimization through communication" (Brettschneider, 2013, p.327). The aim of communication is to explain a decision for a specific project that has been legally made from a legal perspective in such a way that it is accepted, or at least

tolerated, by the people affected (Grunwald et al., 2018, p.841). The social acceptance of infrastructure projects therefore depends heavily on smooth communication between all stakeholders involved - project developers, politicians, administration and citizens. On the one hand, communication also incurs costs, but these are ultimately more than paid for by the opportunity to increase project acceptance (Brettschneider & Müller, 2018; cited in Walter, 2023, p.36). Brettschneider (2013) sees the permanent communicative support of a project from the initial phase to completion as essential. Entering into communication at an early stage - as part of the planning and approval process - is therefore so crucial, as there is not yet any vehement opposition - such as citizens' initiatives - and sceptical citizens seek to talk to the project developers on their own initiative. In this phase, it is important to address their concerns and interests and to convince as many people as possible to engage in fair dialog through a serious and honest attempt at transparent and honest communication (Brettschneider, 2013, p.326 f.). In this way, a relationship of trust between the various stakeholder groups is created from the outset through successful communication as well as formal and informal participation methods. If citizens have good experiences with the developer during this phase, acceptance of the solution is at least more likely (Hildebrand et al., 2018). If a developer has categorised systematic internal and external communication as negligible, the die will already have been cast if vehement protests have already been established among the citizens. In this way, the developer creates the problems itself and can no longer contain them. It is therefore about more than just crisis communication during a project (Brettschneider, 2013, p.322).

There are a few basic things to consider for successful project communication in an infrastructure project. The project planner must start communicating at an early stage and communicate offensive, proactive, long-term and strategic throughout the entire project period, from the planning approval to the opening ceremony (Brettschneider, 2013, p.322 ff.; Kalka & Schlabbers, 2014, p.30). The procedure must be explained again and again in every phase of the project. This also includes highlighting possible alternatives to the project and explaining why these are ultimately no longer an option. Communication must be honest, open and transparent, i.e. at eye level with all stakeholders (Brettschneider, 2014, p.61). The keyword here is dialog-oriented project communication. If the project planners are in constant communication, crisis situations can be prevented. Infrastructure projects are complex - in technical, economic and legal terms. When communicating, it is important to ensure that the wording is understandable, that technical language is translated and that the messages are ultimately clear to

everyone (Brettschneider, 2014, p.61). Although technical details are important for the project, the focus of communication must still be on the benefits (Brettschneider, 2011). A general recommendation for companies is to communicate the specific benefits of the energy transition at a local level in a targeted manner and present them visually. The presentation should not be limited to the technical features of the systems. In order to increase local acceptance, communication should also emphasize the positive effects on the local population resulting from the construction and operation of the plants (Hildebrand, 2011; Fuchs et al., 2016; cited from Walter, 2023, p.141). Comprehensive communication works with the hard facts, but also tells interesting stories and appeals to people emotionally and without ideology. Visualizations play an important role in making messages tangible that can be formulated in text but are not concrete. The various communication tools must be comprehensive and coordinated. Project planners should use a wide range of channels and platforms, from traditional press work to flyers, a website, social media and information events. Direct communication with all stakeholders - residents, initiatives, employees, politicians and administrators, journalists - is essential. Through this broad-based communication, the core messages are placed and dialog is made possible (Brettschneider, 2014, p.61).

The VDI has drawn up its own guidelines for successful communication and public participation in the form of the VDI-7001 Richtlinie **(Fig. 4)**. This is derived from good examples from practice combined with scientific findings *(VDI 7001 Kommunikation und Öffentlichkeitsbeteiligung bei Planung und Bau von Infrastrukturprojekten*, n.d.; cited from Brettschneider, 2018, p. 103 f.).

1. Open-minded and appreciative attitude
2. Clear framework conditions
3. Early involvement of citizens
4. Comprehensive clarification of facts
5. Inclusion of different interests
6. Professional process design for fairness and transparency
7. Clarity on how to deal with the results
8. Transparency of financing
9. Communicate clearly
10. Variety of communication instruments used

Fig. 4: VDI Guideline 7001 Communication and public participation in the planning and construction of infrastructure projects according to Brettschneider (2018, p.103 f.).

For the communication of a large infrastructure project, Brettschneider (2013) has also identified nine phases for project communication **(Fig. 5)**.

Phase 1: Determining the basics
In this phase, the organisational basis for project communication is defined, including the responsibilities for internal and external communication. A permanent communications coordinator becomes part of the project team and should be able to communicate complex content in an understandable way. The crisis communication processes are also planned and recorded.

Phase 2: Preliminary planning
A stakeholder and topic analysis is carried out to identify stakeholder groups and relevant topics. Based on this analysis, a communication strategy is developed that harmonises stakeholders, messages and communication tools. The focus is on key messages and the social benefits of the project, as well as transparency in the evaluation of project alternatives.

Phase 3: Conceptual design
In this phase, different variants of the project are communicated and the advantages and disadvantages are presented transparently. Technical risks and their management should be communicated openly, and complex issues must be explained in an understandable way. Visualisations and dialogues with local residents are particularly important.

Phase 4: Permit planning
The legally compliant approval documents are prepared, whereby technical language is simplified for public discussion. Engineers are trained for public hearings in order to explain the procedures clearly. It is also important to communicate clearly what will and will not be decided in this phase.

Phase 5: Implementation planning
The same applies here as in phases 3 and 4: communicate clearly, work with images, visualise plans in a condensed form, seek dialogue.

Phases 6 and 7: Preparation and participation in the contract award process
It is explained which engineering and construction services are required and how the selection is made among the providers. The importance of awarding contracts for the regional economy and the labour market is emphasised, with a focus on regional companies.

Phase 8: Construction work
Residents are regularly informed about the progress of the construction work and an ombudsman is appointed as a contact person. Construction site marketing with tours and events ensures a positive public perception of the project.

Phase 9: Property management and documentation
The opening ceremony takes centre stage and the connection between engineering services and social prosperity is highlighted. Communicating the success of the project contributes to the positive reputation of the engineers, which is important for future projects.

Fig. 5: Communication in the individual project phases of an infrastructure project according to (Brettschneider, 2013, p. 323 f.)

However, communication alone is not enough to create acceptance. Its task is to contribute to shaping it (Krebber, 2015 ; cited from Walter, 2023, p.36). Grunwald et al. (2018) Natürlich! Hier ist eine stärker umformulierte, akademischere Version des Absatzes:

Grunwald et al. (2018) critically assess the potential of communication as a tool to foster public acceptance, emphasizing its limited impact. Although communicative efforts can contribute to illustrating individual and collective benefits of a given project and may support processes of positive identification, large-scale infrastructure developments are frequently associated with significant burdens for local populations. Moreover, the societal value of such projects is often the subject of controversy. The authors argue that acceptance cannot be substantially increased through information dissemination or dialogue-based communication alone. In fact, such transformative interventions are frequently perceived as disruptive or externally imposed rather than as meaningful additions to the local environment. This structural asymmetry places communicators in a difficult position. Consequently, Grunwald et al. (2018) stress the necessity of creating more substantive opportunities for public participation, as the limits of communication become apparent in the absence of genuine involvement (Grunwald et al., 2018, p.841).

The deep geothermal plant in Unterhaching near Munich, for example, is named as a project with a high level of local acceptance thanks to open and comprehensive communication in a wide variety of ways and 100% involvement in the community (Kunze & Pfeiffer, 2018, p.675) .

2.4. Acceptance communication

The area of acceptance communication is still a relatively young field of research, which is why it is still being developed and not widely studied (Höhne et al., 2018; cited in Walter, 2023, p.35). Acceptance communication is a field of action of strategic communication and therefore not a sub-area of corporate communication, but rather a field of action of strategic communication (*DPRG AK Akzeptanzkommunikation Formuliert Vision Und Mission*, 2018; Krebber, 2018; cited from Walter, 2023, p.35). Acceptance communication describes communication measures with the aim that a company increases acceptance for a project and legitimizes it through communication (Becker et al., 2016; Bentele, 1995; Bentele et al., 2015; Brettschneider, 2014; Mast & Stehle, 2016; cited in Walter, 2023, p.35). Ultimately, the unacceptance of all subjects does not have to be turned into acceptance; rather, it is about social integration (Walter, 2023). Communication is seen as the central influencing and

success factor for generating or increasing acceptance (Becker et al., 2016; Bentele, 1995; Bentele et al., 2015; Brettschneider, 2014; Mast & Stehle, 2016; cited in Walter, 2023, p.35). Mast and Stehle, (2016; cited in Walter, 2023, p.35) even see communication as a prerequisite for this. So if there is a problem with acceptance, then there is usually also a problem with communication (Krebber, 2015; cited in Walter, 2023, p.36). Good acceptance communication is characterized by an early and continuous dialogue that is proactively sought, is open to concerns and worries and coordinates various communication measures (Brettschneider, 2014; cited by Walter, 2023, p.38). It is operated in such a way that everyone, regardless of whether they have prior knowledge or not, has the opportunity to obtain comprehensible information (Walter, 2023, p.38). Borner (2019, p.353) sees the danger that if there is a lack of guiding and coherent narratives on the energy transition and a lack of information on how people can be involved, acceptance will fall and people will question the system itself.

2.5. Conflict communication

The energy transition and its issues are inherently conflict-prone (Bornemann & Saretzki, 2018; Brettschneider, 2011, 2016; Krebber, 2016; Renn, 2015; cited in Hellmuth & Jakobs, 2021, p.2). Conflict situations and differences of opinion are constant project companions, especially in wind projects, and can exacerbate acceptance problems on site (Hoeft et al., 2017; Naumann et al., 2017; cited from Hellmuth & Jakobs, 2021, p.2). Conflict situations can arise from differences of opinion, for example when it comes to socially perceived aspects of justice or in relation to a suitable location for energy plants (Bauriedl, 2016; Wunderlich, 2012; cited from Hellmuth & Jakobs, 2021, p.2). Conflicts must be handled through communication, as communication is an important influencing factor. Good conflict communication is characterized by clearly defined conflict management and clear goals and instruments. The objectives, instruments and measures of conflict communication and management should be seen as natural components of the overall strategy of communicative support for infrastructure projects and should be integrated into this (Brettschneider, 2016; Naumann et al., 2017; Renn, 2015; cited in Hellmuth & Jakobs, 2021, p.2). Successful conflict communication and public participation is a good starting point for the successful planning and implementation of infrastructure projects that are subject to conflict. In the field of conflict communication, however, there is still a clear need for research into the accuracy of fit and evaluation criteria for measures (Hellmuth & Jakobs, 2021, p.15 f.).

3. Theoretical Framework

This section presents some theoretical models and concepts related to wind power and acceptance. The theory of social acceptance, the NIMBY phenomenon and, in this context, the VESPA model as a more well-founded and extended approach and the Integrated Acceptance Model (IAM) play a role in the consideration of acceptance.

3.1. Social Acceptance

Society's general acceptance of renewable energies is demonstrably high (Caporale & De Lucia, 2015; E. Moula et al, 2013; Ribeiro et al, 2014; van der Horst & Toke, 2010; Wüstenhagen et al, 2007 ; cited from Segreto et al, 2020, p.2) . At the same time, in those countries with a high level of social acceptance for the energy transition in general, local acceptance decreases when it comes to specific projects on site and people are directly affected by the construction of a plant (Bolsen & Cook, 2008; Devine-Wright, 2005; Enevoldsen & Sovacool, 2016; Gross, 2022; Johansson & Laike, 2007; Meyerhoff et al., 2010; Rand & Hoen, 2017) cited in Klok et al, 2023, p.1; Capodaglio et al., 2016; Jobert et al., 2007; Upreti & van der Horst, 2004; cited in Segreto et al, 2020, p.2). Although the energy transition is therefore supported by the vast majority of the population across Europe, its implementation is subject to criticism (Maleki-Dizaji et al., 2020, p.3) . The lower level of local acceptance has therefore proven to be a significant obstacle to the construction of renewable energy plants and a limiting factor for the energy transition. (Segreto et al., 2020, p.2). The lack of acceptance thus hinders the expansion of wind energy (Klok et al., 2023, p.1).

The first scientist to address the problem of social acceptance of wind energy was the Swede Ingvar Carlman (Carlman, 1984; cited in Klok et al., 2023, p.2 and Wüstenhagen et al., 2007, p.2684) . At the European Wind Energy Conference in 1984, he publicized his finding that social, political and regulatory acceptance is important for the construction of wind turbines. In his study, he examined the views of politicians and decision-makers on planning the use of wind energy in Sweden (Wüstenhagen et al., 2007, p.2684). As society was favourably disposed towards renewable energies, the question of social acceptance was hardly addressed in the 1990s (Carlman, 1984; Wüstenhagen et al., 2007, p.2684).

The term 'social acceptance' has long struggled with definitional issues (Mills & Williams, 1986, cited in Ellis & Ferraro, 2016, p.12), as the validity and normative implications of the concept have been rightly questioned. Notwithstanding the criticism of the term 'social acceptance' and the risk that it

oversimplifies a complex social phenomenon, it is still widely used and has a heuristic value for which there is currently no adequate alternative (Ellis & Ferraro, 2016, p.2). In their article, Laborgne & Radtke (2023) sometimes speak of "social acceptance" and sometimes only of "acceptance", but they mean the same phenomenon here. (Hildebrand & Renn, 2019; cited from Laborgne & Radtke,2023, p.2) also see difficulties in the different definitions of the term acceptance and its heterogeneous use. For example, "acceptance" has been used very broadly for several years, particularly in relation to large-scale projects and technologies and especially energy transition projects.

Maarten Wolsink, who researches and teaches at the Faculty of Social and Behavioural Sciences at the University of Amsterdam, has been working extensively on the topic of "social acceptance" for a long time. He describes it as

"The degree of which a phenomenon (e.g. wind power implementation) is taken by relevant social actors, based on the degree how the phenomenon is (dis-)liked by these actors." (Wolsink, 2012, p.3)

In their definition of social acceptance, Bertsch et al. (2016, p.466) focus on the public's active or passive approval of a particular technology, product or policy. Klok et al. (2023, p.2) as well as Upham et al., 2015, p.9) highlight in their attempted definition the positive reaction (including attitude, intention, behaviour and - if applicable - use) to or tolerance of a technical or socio-technical transition project by members of a particular social unit (country or region, community or city and household, organization). Hildebrand and Renn (2019) define acceptance as the "relatively constant result over time of an evaluation process linked to certain framework conditions (acceptance context) towards an acceptance object (e.g. renewable energy system) by an acceptance subject" (Hildebrand & Renn, 2019, p.262). (Paliwoda-Matiolańska, 2020) definition of "social acceptance" centers on how a society or specific social group responds to challenges arising from the reallocation of costs and benefits. Given the diverse ways in which the term is interpreted, two distinct conceptual angles emerge. One frames “social acceptance” as a reflection of public opinion or group attitudes toward a particular issue—an approach commonly adopted in academic literature. Alternatively, it can be seen as the outcome of a complex, evolving process shaped by the project itself, the perspectives of stakeholders, and the broader implementation context (Paliwoda-Matiolańska, 2020, p.1).

Wüstenhagen also sees the problem of a lack of clarity in the definition of the term "social acceptance", which is a frequently used term in the literature. In her research, which is often referred to (see Bertsch

et al., 2016; Cousse et al, 2020; Ellis & Ferraro, 2016 ; Enevoldsen & Sovacool, 2016; Laborgne & Radtke, 2023), they distinguish between three dimensions of social acceptance, namely socio-political acceptance, community acceptance and market acceptance (Wüstenhagen et al., 2007, p.2684) (**Fig. 6**).

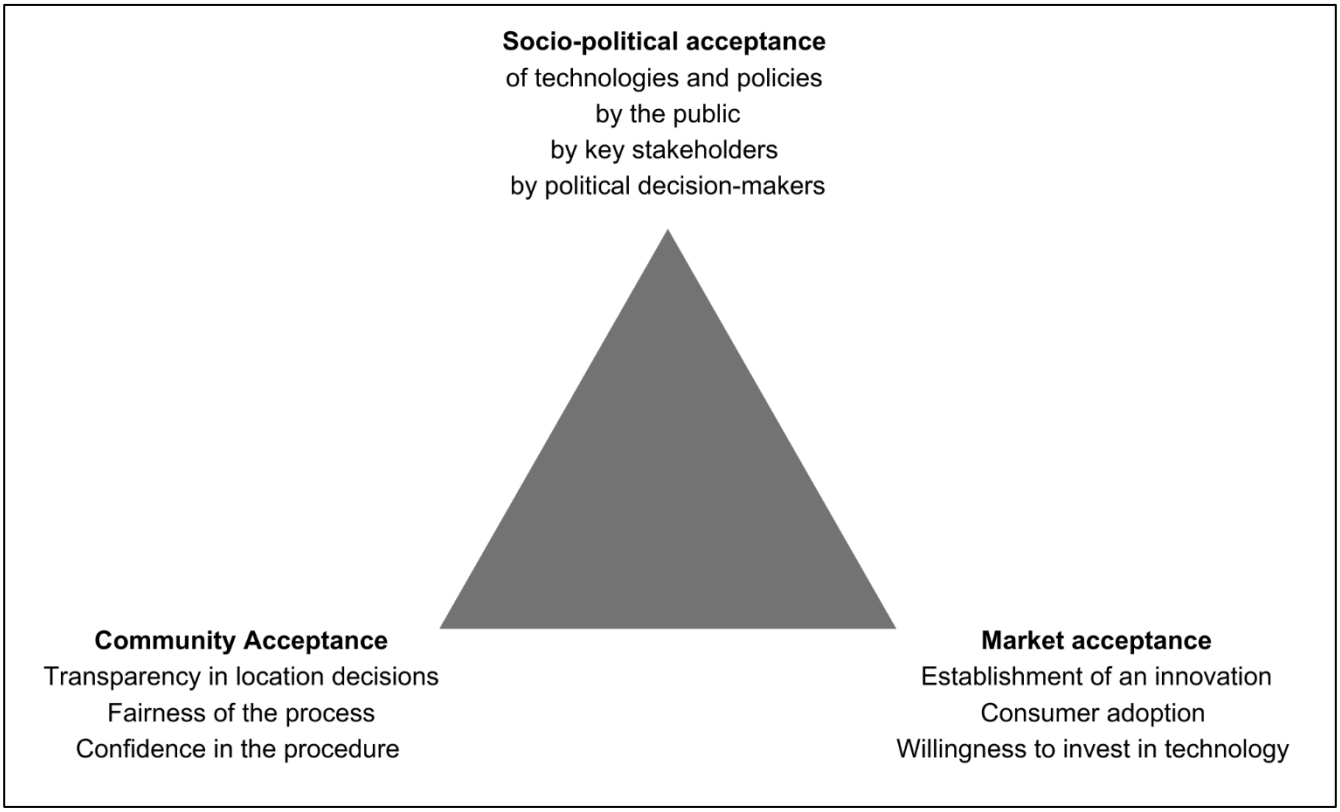


Fig. 6: The triangle of social acceptance of renewable energy innovation according to Wüstenhagen et al, (2007, p.2684) (own illustration).

“Socio-political acceptance” is the acceptance of technologies and policies or political measures by the public, key stakeholders and political decision-makers. It represents the broadest and most general level of social acceptance. Political decision-makers are often misled by the overall social acceptance of renewable energy into that acceptance of a project is not a problem, but neglect the local context (Ellis & Ferraro, 2016, p.13; Paliwoda-Matiolańska, 2020, p.2; Wüstenhagen et al., 2007, p.2684 f.).

“Community acceptance” refers to local and specific acceptance. In other words, it is about siting decisions and renewable energy projects on site and acceptance by local interest groups, especially residents and local authorities. Local "community acceptance" sheds light on the local situation,

landscape identity, the fairness of the process, and the views of residents and local authorities and their trust in the process (Ellis & Ferraro, 2016, p.13; Paliwoda-Matiolańska, 2020, p.2; Wüstenhagen et al., 2007, p.2685).

“Market acceptance” deals with the establishment of an innovation through consumer adoption on the market. A good example of this is the purchase of green electricity. Although the innovation is accepted on the market through the purchase of green electricity, this does not necessarily correlate with the social acceptance of the construction of renewable energy plants. If the demand for green electricity increases, new locations for plants must be developed. As a result, the disconnect between actual supply and demand can even exacerbate the problem of social acceptance, because as demand increases but social acceptance is insufficient, the expansion of the corresponding supply infrastructure lags behind. Market acceptance also includes the willingness of investors to invest in or finance the technology, to produce the technology on a large scale and to involve consumers in the markets created by the technology (Ellis & Ferraro, 2016, p.13; Paliwoda-Matiolańska, 2020, p.2; Wüstenhagen et al., 2007, p.2685).

The social acceptance of renewable energies is influenced by different aspects than conventional energies. Renewables are distributed decentral, while conventional energy sources are concentrated in a few locations. This means that many more location decisions have to be made for renewables. Furthermore, the conversion of renewable energies is usually characterized by a lower energy density, so that the relative visual impact (per MWh of output) tends to be higher. The location of electricity generation is therefore usually much closer to the consumer and not decoupled from it. Generation takes place in the consumer's "backyard", so to speak. Most renewable energy technologies do not compete on an equal footing with established technologies, so their acceptance is a decision between short-term costs and long-term benefits (Bell et al., 2005; Wolsink, 2006; cited in Wüstenhagen et al., 2007, p.2685).

Local social acceptance increases when the benefits exceed the costs, e.g. through falling electricity prices for local residents, the development of leisure infrastructure and an improvement in environmental quality (Segreto et al., 2020, p.17). If wind power is perceived as an effective, affordable and useful source of energy, local acceptance will be higher (Hoen et al., 2019; Liebe & Dobers, 2019; cited in Hübner et al., 2023, p.2). Those who have positive attitudes towards the energy transition are

often also positively associated with the acceptance of wind farms (Renn & Marshall, 2020; Sonnberger & Ruddat, 2017; Wolf, 2020 ; cited from Hübner et al., 2023, p.2). On the other hand, those who are critical of the implementation and question the sense of the energy transition are also more critical of local energy projects (Reusswig et al., 2016 ; cited from Hübner et al., 2023, p.2). A wind farm or wind turbine can have an even greater benefit if it is operated by an energy cooperative. Even at the project implementation stage, care is often taken to involve local tradespeople, project planners and other service providers. Local cooperative banks are often used as financial partners. In turn, the local authority benefits from tax revenues. Thanks to this boost to the local economy through energy cooperatives, many local people understand and see the sense and purpose of the energy transition on their own doorstep. A citizen-owned wind turbine is therefore perceived differently than that of a large corporation from outside (Stappel, 2023, p.24).

The experience is that the public needs to gain trust in local authorities and developers to build acceptance of renewable energy projects, as trust in key stakeholders remains an important factor for local acceptance (Segreto et al., 2020, p.16).

3.2. Integrated Acceptance Model

Hübner et al. (2023, p.2) propose the Integrated Acceptance Model to summarize overarching acceptance categories, which allows the multi-layered acceptance factors to be taken into account. So far, key acceptance factors can be derived from research, but there is a lack of comprehensive models that capture the factor weights through simultaneous inclusion. The IAM does not only focus on individual factors. Moreover, according to (Bidwell, 2013; Devine-Wright, 2013; Firestone et al., 2018; Hoen et al., 2019; cited from Hübner et al., 2023, p.1), existing models do not include a general assessment of the energy transition or social norms. It is criticized that existing models focus on hypothetical projects or related topics (e.g. power lines). The aim of the Integrated Acceptance Model (IAM) is "to integrate relevant acceptance factors discussed across disciplines into one model and introduce an empirically and practically relevant overarching framework." (Hübner et al., 2023, p.1 f.) . It is also criticized that even after decades of research into the social acceptance of renewable energies, no concrete recommendations for action are available. These are considered to be urgently needed due to the steadily increasing expansion of wind energy (Batel, 2020; cited from Hübner et al., 2023, p.2). The main findings of the study by Hübner et al. (2023) are in line with existing research and summarize previous findings that identified economic impacts, attitudes towards the energy transition,

impacts on local residents and nature, social norms and trust in actors and processes as the most important predictors of local acceptance of WTGs (**Fig. 7**). Accordingly, social acceptance as a complex issue cannot be explained using simple approaches such as setback distances. The IAM thus confirms earlier findings (Hübner et al., 2023, p.7).

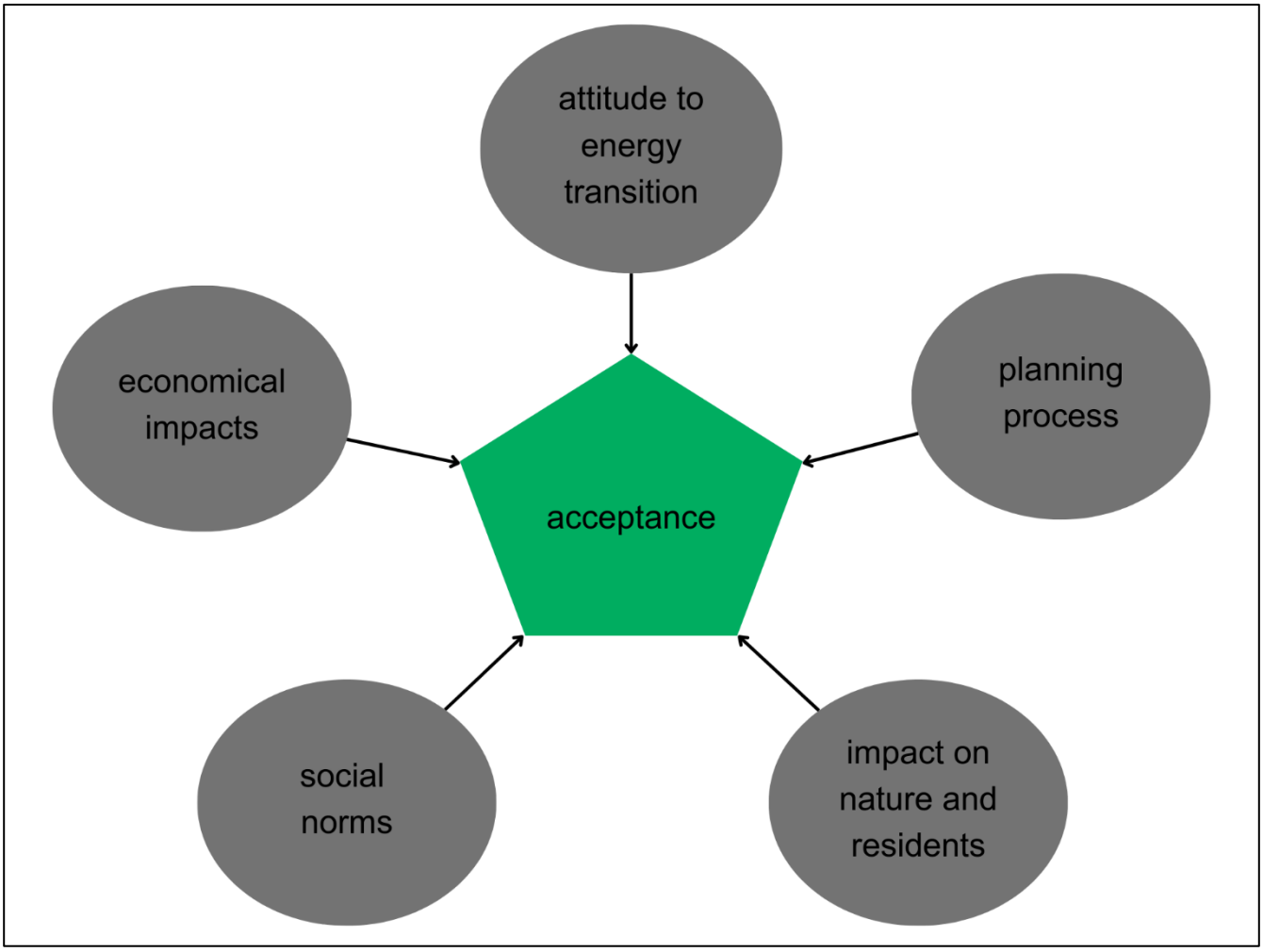


Fig. 7: Five major forces driving the acceptance of wind turbines on site according to Hübner et al. (20 20, p.16) (own illustration).

3.3. NIMBY Phenomenon and VESPA-Model

Wind energy in general regularly receives a high level of support from broad sections of society (Petrova, 2016, p.1280). Wind energy thus differs from the approval ratings for energy generated from fossil fuels, which do not experience such a high and stable level of approval (Devine-Wright, 2005, p.126; Gipe, 1995, p.764 f.). At the local level, however, there is regular resistance when plants are to be built locally (Petrova, 2016, p.1280). There is therefore a gap between general support for wind

energy and local opposition (Devine-Wright, 2005. p.131). This effect of opposition to infrastructure projects in one's own region, such as wind power, is described as NIMBYism or Saint Florian's principle (Brettschneider, 2013, p.320) . This local opposition is attributed to selfishness, ignorance, irrationality and the prioritization of personal interests over social benefits (Petrova, 2016, p.1280).

NIMBY is the "Depreciative interpretation and characterization of opposition to a facility: an attitude of objection to the siting of a facility in the proximity ("backyard"), while by implication raising no such objections to similar developments elsewhere; acronym of "not-in-my-back-yard"." (Wolsink, 2012, p.3)

O'Hare (1977) describes it in simpler terms as follows: people are positive about something (e.g. wind power) until they are actually confronted with it and then speak out against it for selfish reasons (O'Hare, 1977; cited in Wüstenhagen et al., 2007, p.2686).

Involving local people in energy generation projects has a positive impact on society and the spread of renewable energy technologies. However, in many cases the positive effects are hindered by the reaction to LULUs, such as the NIMBY effect. Cooperatives implementing renewable energy can reduce this effect through their participatory approach (Devine-Wright, 2005, p.111).

Quite a few argue that the disparity between the general acceptance of wind power and opposition to specific projects when they are located in one's own backyard can be explained by the NIMBY phenomenon. Others see at least one oversimplification that negates people's actual motives for rejecting wind energy in their own backyard (Bell et al., 2005; Wolsink, 2006; cited from Wüstenhagen et al., 2007, p.2685).

The monocausal explanatory pattern of the NIMBY phenomenon may apply to a few people, but is considered a minor factor when it comes to the motives for local opposition (Wolsink, 1996, p.1087; Laborgne & Radtke, 2023, p.1). According to Wolsink (1996, p.1087) the simple argument of support for wind power in general vs. opposition on one's own doorstep falls short of explaining the difference between socio-political and local acceptance (Laborgne & Radtke, 2023, p.1). For example, in a survey of support and opposition to dilemma statements about three wind farm sites, only 24 percent stated that wind farms should be built in other locations outside their locality (Wolsink, 2000, p.53). He also found that adopted NIMBY attitudes accounted for only four percent of the variance in negative behaviour, as opposed to general attitudes towards wind energy, which accounted for 28 percent.

Wolsink comes to the conclusion that the data do not support the NIMBY hypothesis and that those who can be assigned to the NIMBY camp are generally not so much in favour of wind energy (Wolsink, 2000, p.54). Some social scientists are therefore calling for a more detailed look at people's actual perceptions and motives when it comes to renewable energies and wind energy in particular. NIMBY has also been criticized for its lack of solid theoretical frameworks and conceptual models that could serve as a basis for generating hypotheses (Devine-Wright, 2005; Firestone et al., 2012; Wolsink, 2000; cited from Petrova, 2016, p.1281). Wolsink (2000, p.55) used causal modelling techniques to investigate the factors that influence the behaviour of wind power opponents (**Fig. 8**).

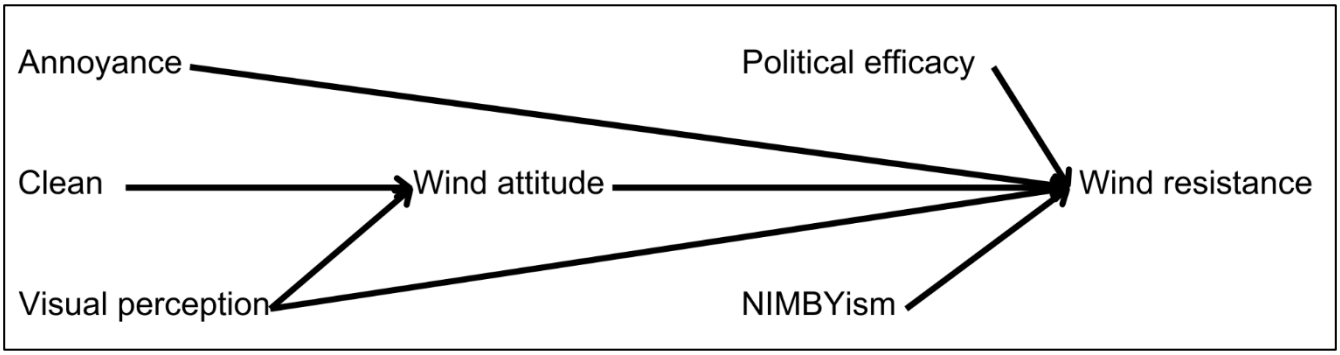


Fig. 8: Model of causal factors determining wind farm resistance according to Wolsink (2000, p.55) (own illustration).

Brettschneider (2013, p.320) sees the NIMBY effect as the sole explanation for protests against infrastructure projects as too short-sighted and only one of many causes. The protest against infrastructure projects due to NIMBY has the strongest motive of all, as residents see the project as restricting their own quality of life. Despite compensatory measures (e.g. noise protection, financial compensation), this reason for rejection remains even after construction. Project-related reasons are another cause of protest. In this case, people criticize individual aspects of a project, e.g. unacceptable effects on the environment and nature, project costs that are too high, a supposedly excessive project risk - whereby laypeople usually use absolute standards to assess these aspects, while experts assess risks based on probabilities or comparisons - or questioning the benefits of a project (Brettschneider, 2013, p.321; Renn, 2004; cited from Brettschneider, 2013, p.321). It is not uncommon for the roots of protest against a project to lie elsewhere, which Brettschneider (2013, p.320) refers to as "hidden reasons". Although these reasons are a key motive behind their protest, they are not openly expressed and addressed. On the surface, people criticize individual aspects of a project, but actually perceive

infrastructure projects as an attack on the "cultural identity" of their region; for some, however, developments happen too quickly and they find the acceleration of their own lives unpleasant (Brettschneider, 2013; Göschel, 2013; cited from Brettschneider, 2013,p.320). It is not uncommon for people to lose trust in "politics" and "the economy". A negative mood is then projected onto the projects of companies. The type of communication and lack of transparency in formal procedures is also seen as a reason why people express their protest about infrastructure projects. Citizens feel that the way politicians and/or project developers deal with them is unfair, as communication is not at eye level and this creates the feeling that objections are not taken seriously. This feeling is reinforced by the fact that legal issues often take centre stage in formal proceedings. The technical language used by lawyers and engineers is perceived as incomprehensible and distancing. Another criticism is a lack of transparency and incomplete communication or even a lack of communication, also at a time when people perceive it as too late. Under certain circumstances, the parties involved are also accused of deliberately providing false information (Brettschneider, 2013, p.321).

(Wolsink, 2000) also identifies further reasons for typifying local protest. He distinguishes between four forms of resistance. However, the reasons he identifies are at a deeper level than those of Brettschneider. He also sees NIMBY as a cause. He sees the positive attitude towards wind energy in general combined with resistance to the construction of a wind farm in one's own neighbourhood as the only attitude/behaviour combination that can be described as a NIMBY standpoint. The second type of resistance he sees is the group of people who reject wind turbines on their own doorstep because they have a fundamentally negative attitude towards wind power. This position is sometimes referred to as "NIABY". For people in this group, concerns about the general impact of wind energy on the landscape are the cause of their opposition. The third type of opposition is characterized by an initial positive attitude towards wind energy, which then turns negative in the course of the discussion about the planned construction of a wind farm. This type reflects a NIABY attitude and shows the importance of the attitudinal dynamics resulting from the changed perception of risk during the decision-making process. The last resistance type does not reject wind energy technology as a whole and is in favour of wind energy generation, but certain projects are seen as flawed under certain conditions. People who belong to this type of resistance do not question the fundamental suitability of a certain site, but expect disturbances to the landscape or see it as too sensitive. This resistance is intensified, especially if other available sites in the vicinity are considered more suitable (Wolsink, 2000, p.57) .

Social science research has developed a more differentiated understanding of local resistance in the energy sector. The NIMBY concept no longer plays an important role and is often criticized because it labels opposition groups as self-interested or irrational (Kempton et al., 2005; C. Walker et al., 2018; Wolsink, 2006; cited from Karakislak & Schneider, 2023, p.3). Due to its conceptual weakness, inaccuracy and counterproductive way of describing opposition to wind energy projects, it is considered unhelpful and distracts from the root causes. Nevertheless, it is still popularly used by many stakeholders, especially in mass media and political discourse, to explain community resistance to wind energy projects (Ellis & Ferraro, 2016, p.25). However, the social reality of local resistance is different and does not match the way local resistance is represented by the NIMBY concept (Ellis & Ferraro, 2016, p.25 f.). Petrova (2016) promises a different approach to explaining resistance with the VESPA approach.

Using this model, a category system of resistance to wind power can be established, which differentiates between four parameters: visual/landscape, ecological, socio-economic and procedural aspects. Visual impairment includes visual disturbance and disturbance of the landscape as well as noise pollution. Ecological disturbance includes disturbance of the local environment, particularly local flora and fauna (Wiersma & Devine-Wright, 2014; Wolsink, 2005; cited in Petrova, 2016, p.1281). Socio-economic factors include increasing project acceptance of renewable energy installations through financial community participation (Devine-Wright, 2005; Groothuis et al., 2008; D. A. Mills & Manwell, 2012; Wolsink, 2005; cited from Petrova, 2016, p.1282). The last factor is procedural aspects, i.e. factors related to the decision-making process for site selection (Aitken, 2010; Kempton et al., 2005; Poumadère et al., 2011; Schively, 2007; van der Horst & Toke, 2010; G. Walker, 1995; cited from Petrova, 2016, p.1283). The VESPA model aims to provide a better understanding of the motives of proponents and opponents of wind power by categorizing their concerns (Petrova, 2016, p.1292).

3.4. Framing Theory

Opponents of wind power often have more tangible arguments that are closer to people's reality, while positive associations tend to be more abstract. Therefore, opponents of wind power often have an easier time (Cousse et al., 2020; cited from Karakislak & Schneider, 2023, p.3). How something is framed in communication affects the attitudes and behaviors of the addressees (Chong & Druckman, 2007, p.109), because a frame creates an everyday reality by giving meaning to something and allowing political issues to be defined and interpreted (W. A. Gamson & Modigliani, 1989; W. Gamson &

Modigliani, 1987; Shah et al., 2002; Tuchman, 1978 ; cited from Chong & Druckman, 2007, p.106). A frame has the power to prevail if it proves to be the best justification for a competing position on a topic in the discussion. Such frames appear more convincing to opinion leaders and listeners than other objective arguments. The idea is to link an issue - such as wind power - to a positive association or value that resonates strongly with the public (Chong & Druckman, 2007, p.116). The communication scientist Robert M. Entman has worked intensively on framing:

"Framing essentially involves selection and salience. To frame is to select some aspects of a perceived reality and make them more salient in a communicating text, in such a way as to promote a particular problem definition, causal interpretation, moral evaluation, and/or treatment recommendation for the item described." (Entman, 1993, p.52)

By influencing the attitudes and behaviour of those addressed, frames take on a special importance in communication (Chong & Druckman, 2007, p.109). The scientific communication of facts often has less impact than messages from an economic and political perspective. By addressing people's basic values and beliefs, they catch on with the addressees (Iyengar, 2005; Schmidt, 2009 ; cited from Richards et al., 2013, p.427).

3.5. Application of Theory

The theoretical models, concepts and backgrounds primarily played a role in the development of the questionnaire. Social acceptance theory formed the starting point for the differentiation between socio-political, market economy and local acceptance. These categories were integrated into the questionnaire design by specifically asking about transparency (question 8), participation (9) and communication goals (16). The question about the influence of the cooperative organizational form on acceptance (27) reflects social and economic factors of acceptance theory. The Integrated Acceptance Model is relevant in the questions on communication goals (16), the perception of communication measures (17) and their effect on the acceptance of wind turbines (18, 19). By investigating which channels prove to be the most effective (23), it was examined which form of communication best contributes to acceptance. The question of the importance of the cooperative approach (27) serves as a specific factor in the acceptance model. The NIMBY phenomenon and the further developed VESPA played a role in the questions on rejection and criticism (11-15) and the investigated mechanisms of resistance and their communicative management. The VESPA model helps to reflect different forms of

criticism (e.g. rational vs. emotional rejection) in the questions (11, 12, 14, 15). The question on negative media coverage (22) analyses how external actors contribute to the resistance of wind power opponents. The questions on narratives and emotional messages (4-7) are intended to discuss which frames are used in the communication of citizen energy cooperatives to present wind energy in a positive light. The questions on media strategy (20-21) deal with the design and placement of messages in the public perception. The following empirical part of this paper deals with these questions.

4. Research Design and Methodology

This paper deals with the communication approaches of energy cooperatives contribute most to the social acceptance of wind turbines and what are the success factors and challenges. The semi-standardised method of communication science chosen for this purpose is semi-structured, guideline-based expert interviews (Loosen, 2016, p.142 ff.). The number of interviews was n = 15. Representatives from 15 citizens' energy cooperatives were interviewed. In one cooperative, two company representatives took part. Those (IP 7.1 and IP 7.2) were interviewed together. For the sake of simplicity and because it is unimportant which of the two said something, only IP 7 is cited below. A precise breakdown of who said what can be found in the interview transcript. The survey period extends from November 5 to December 20, 2024The interviews were conducted in German to avoid translation errors and comprehension difficulties.

4.1. Sampling

The target group for the expert interviews are communications managers, public relations officers and board members from community energy cooperatives throughout Germany. Companies that operate their own wind turbines or have invested in wind turbines were interviewed. The sampling of this study corresponds to the strategy of purposeful sampling, namely typical case sampling according to Patton (2014). The experts surveyed from the companies listed are between 33 and 78 years old and just under 56 years old on average. Three of the 16 experts surveyed are female and 13 are male. The average number of years that the interviewees have been working in the respective cooperative is 11 years on average and ranges from one to 27 years. Eleven of the 16 experts interviewed are in management or on the board. The other five experts work in their function as company spokesperson or communications officer. The size of the cooperatives varies greatly and ranges from 142 to 42,000 members (**Tab. 1**).

Cooperative	Number of members	Total assets	Employees (regardless of part-time or full-time)
IP 4	42.000	143.59 million €	250
IP 10	13.000	214 million €	100
IP 15	2.300	51 million €	15
IP 2	1.500	144 million €	300
IP 12	1.500	10 million €	15
IP 5	1.200	28 million €	3
IP 9	1.126	12 million €	4
IP 11	932	35 million €	2
IP 1	520	20 million €	1
IP 14	500	5 million €	0
IP 3	480	2.9 million €	1
IP 8	468	-	4
IP 6	380	0.3 million €	2
IP 7.1/IP 7.2	302	5.4 million €	4
IP 13	142	40 million €	6

Tab. 1: Size of the cooperatives sorted according to the number of members.

4.2. Guideline

An overview of the topics was sent to all respondents in advance in order to obtain targeted information on these topics. Some respondents had requested this in advance, but ultimately everyone received the overview of topics in order to create consistency. The entire questionnaire was not made available to the experts surveyed in advance in order to obtain answers that were as spontaneous as possible and not pre-prepared. The guideline (**Fig. 9**) comprises a total of 31 questions on the following topics: Communication strategies; narratives, messages and emotionality in communication; transparency and participation in communication and timing of communication; challenges and dealing with criticism in communication, goals and effects of communication; media and channels used; means of communication; the role of the cooperative in the acceptance of wind power; and experiences and best practices in communication. Some cooperatives stated that they had not yet communicated specifically about wind power or their own investments in wind energy projects. According to their own

Communication strategies:
1. What communication strategies do you use to inform the local community about planned wind energy projects?
2. How do you customise your communication to different target groups (e.g. residents, local authorities, media)?
3. How much or how often do you communicate about wind power?

Narratives
4. What narratives and messages do you use to communicate about wind power?
5. To what extent does emotional appeal play a role in your communication on wind energy projects? Do you specifically use emotional arguments to promote acceptance?
6. How do you communicate the benefits of wind energy projects, particularly in terms of local economic or environmental benefits for the community?
7. To what extent do you compare wind energy projects with other renewable energies or fossil fuels in your communication in order to increase acceptance?

Transparency and participation:
8. How important is transparency in your communication about wind energy projects, and how do you ensure this?
9. What role does public participation play in your communication?
10. When do you start communicating about a particular wind energy project? Why at this point in time?

Challenges and criticism
11. What communication challenges do you face when it comes to wind energy projects?
12. How do you deal with criticism or concerns from the local population in terms of communication?
13. What has already gone wrong in your communication?
14. How do you deal with the negative aspects of wind energy projects (e.g. changes to the landscape) in your communication?
15. Do you try to address these negative aspects openly or rather avoid them? Why?

Goals and effects
16. What are the objectives of your communication strategy for wind energy projects?
17. Have you observed that certain communication measures lead to greater acceptance of wind energy projects?
18. How do you think communication contributes to the acceptance of wind turbines or wind farms?
19. How do you measure the success of your communication measures? What indicators do you use to determine whether your communication leads to greater acceptance?

Media and channels
20. Which communication channels (e.g. social media, information events, local newspapers) do you prefer to use to inform people about wind energy projects? Why?
21. What role do local and national media play in your communication strategy? How do you work with them to promote positive coverage of wind energy projects?
22. Do you have specific experiences with media criticism or negative reporting? How have you dealt with this?
23. Do you see differences in the effectiveness of different channels in terms of promoting acceptance?
24. How do you work with local political actors, environmental organisations or other stakeholders to communicate wind energy projects?

Means of communication
25. To what extent do you use textual means compared to visual means (e.g. simulations, graphics, drone images) to make the impacts of wind energy projects understandable?
26. To what extent can visual representations positively influence the acceptance of wind energy projects?
Role of the co-operative
27. To what extent do you believe that the co-operative approach has an influence on the acceptance of wind energy projects?

Experiences and best practices
28. Can you give specific examples where your communication has led to a significant improvement in the acceptance of a wind energy project?
29. Which best practices in communication have proved particularly successful for your cooperative?
30. What feedback do you receive on your communication on wind power?
31. What other comments do you have on communication regarding wind power and acceptance?

Fig. 9: The 31 questions of the interview guide.

assessment, these representatives were not asked some of the questions because they seemed pointless due to a lack of experience with communication - i.e. there were no empirical values for these questions.

4.3. Evaluation

4.3.1. Transcription

The recorded expert interviews were transcribed orthographically as a purely semantic transcription. Only the reproduction of what was said is relevant for the work and the transcripts are therefore kept rather simple. Contextual information was not included and non-linguistic events were not recorded. As none of the interviewees had a distinct dialect, it was not necessary to record one (Howitt, 2016, p.143). However, the different types of regional expression were recorded. Colloquialisms such as "rauskriegen" instead of the correct "feststellen" or "kucken" instead of "sehen" were adopted in the transcript. In order to reproduce a coherent transcript, to adhere to written conventions, to correct errors in the statements of the recorded persons or to react to logical leaps in spontaneous speech, the transcribed texts were slightly adapted (Chiari, 2006, p.3), e.g. when the beginnings of sentences appeared to be meaningless due to being restarted after a short pause. In addition, "ähms", "öhms" or similar filler words were not transcribed. All interviews were anonymized to make it impossible or difficult to identify the interviewees or the companies. In concrete terms, this means that the name of the energy cooperative mentioned in the interview was replaced by "cooperative", the mention of specific municipalities, districts or federal states in which the cooperatives are active was replaced by ‘our city/district/federal state’, among other things and the names of employees were replaced by "colleague". Other references and conclusions about the respective company or the interviewee were also anonymized. The names of the interviewees have been replaced by an interview ID: IP 1 - IP 15.

4.3.2. Qualitative content analysis

The qualitative content analysis according to Mayring (2022) was carried out using the QCAmap software. Individual categories were derived from the theoretical models presented in order to ensure a partially theory-based approach. Further codes for analysing communication and acceptance of wind energy are not known and were added inductively. The expert interviews were therefore evaluated using a combination of deductive and inductive category formation, whereby the majority of the categories were formed inductively (Fürst et al., 2016, p.216 f.).

5. Results of the Expert Interviews

This section presents the results of the qualitative content analysis according to Mayring (2022). The expert interviews were summarized in the form of inductively and partly deductively formed categories (see Table 2).

Category ID	Category Name	Absolute Count	% of SUM	N of Documents	% of documents
RQ1-1	Direct Communication	15	4	15	100
RQ1-2	Digital Communication	12	3	12	80
RQ1-3	Social media communication	15	3	12	80
RQ1-4	Media Communication	13	3	13	86
RQ1-6	Communication with Authorities	5	1	5	33
RQ1-7	Communication Intensity	13	3	13	86
RQ1-8	Communication Message	14	4	14	93
RQ1-9	Communication Aim	12	3	12	80
RQ1-10	Narrative	5	1	5	33
RQ1-11	Emotional Address	12	3	12	80
RQ1-12	Comparison of Energy Resources	14	4	14	93
RQ1-13	Transparent Communication	15	4	15	100
RQ1-14	Enlightenment	5	1	5	33
RQ1-15	Importance of Citizen Participation	15	4	15	100
RQ1-16	Entry into Communication	15	4	15	100
RQ1-17	Communication Challenge	12	3	12	80
RQ1-18	Communicative Handling of Criticism	13	3	13	86
RQ1-19	Miscommunication	14	4	14	93
RQ1-21	Importance of Communication	14	4	14	93
RQ1-22	Communication Performance Measurement	11	3	11	73
RQ1-23	Involvement	14	4	14	93
RQ1-24	Handling Media Criticism	11	3	11	73
RQ1-25	Effectiveness of Communication Channels	14	4	14	93
RQ1-26	Degree of Professionalization	9	2	9	60
RQ1-27	Textual Means	9	2	9	60
RQ1-28	Visual Means	15	4	15	100
RQ1-29	Communication Feedback	11	3	11	73
RQ1-30	Communication Channels	9	2	9	60
RQ1-31	Target-group-oriented communication	7	2	7	46
RQ1-32	Analog Communication	4	1	4	26
RQ1-33	Non-communication	2	0	2	13

Tab. 2: Overview of the categories formed inductively and deductively in the content analysis.

5.1. Digital and analogue communication channels

Direct Communication

Without exception, all interviewees from all cooperatives emphasized personal direct contact with citizens and other stakeholders. IP 4 believes "that personal exchange on site is crucial. And this can then take place in various formats". The cooperatives have different approaches to this. Most cooperatives hold information events at least once a year, sometimes several times, or when specific projects are on the agenda. The formats are very different, while IP 4 focuses on energy dialogues, IP 5 organizes theme tables and IP 6 an annual wind symposium. However, the classic frontal event with an input on a podium - sometimes with subsequent discussions - with "laptop, projector, screen" as stated by IP 9 is by far the most frequently used format (IP 1, IP 2, IP 4, IP5, IP 7, IP 9, IP 10, Ip 11, IP 12) and is considered particularly important by most of the participants. IP 7 states that "if we were to go into a project with a project planner, then we would go on site and hold information events. That is actually our, yes, our main communication tool, going on site, talking to people." Some invite guests from (local) politics, well-known experts and public figures or even NGOs and representatives of citizens' initiatives, as IP 1 explains: "In the past, I have also invited a VIP once a year. Hans-Josef Fell, Dr. Tiersch from the weathermen on ZDF and the third was Franz Alt." The response to these events is very different. IP 9 says "then we either sat in front of 0 people or 70 people." Others stated that they had up to 200-250 guests at their event (IP 11) or sometimes up to 300-400 (IP 6). The interviewees consider the aim of the information events and the direct exchange with people to be building trust and getting local residents on board (IP 2, IP 7, IP 11, IP 12, IP 13), IP 13 says: "The direct approach on site is important in order to [increase] acceptance." IP also uses information events to "pick up the questions that are there, that exist." While IP 9 really enjoys the information events, there are also those who find these formats exhausting, such as IP 12: "What is of course super exhausting and annoying is actually holding events and going into the village and then talking to people about it and answering all the sometimes confusing questions." IP 3 and IP 5 have completely abandoned the concept of frontal information events, as they consider them to be ineffective or even obstructive. IP 3 says: "It is of course the case that public information events always carry the risk that even a few individual opponents can massively disrupt such an event and cast it in a massively unfavourable light or mood." IP 5 finds "this classic public information event, I would now describe it as toxic. You can't do that anymore." IP 3 prefers information stands instead. Some cooperatives (IP 1, IP 2, IP 3, IP 10) also rely on completely different

activities such as ground-breaking ceremonies, public festivals, inauguration celebrations, experience days or an open day with guided tours on site, an entertainment program and specialist presentations, as IP 1 reports: "So we also had beer on tap, hot sausages and a few speeches beforehand when the two wind turbines were installed." However, IP 2 does not consider this type of activity to be standard communication due to the high cost of such events. On-site visits or guided tours, as organized by some of the cooperatives surveyed (IP 5, IP 12, IP 15), go in a similar direction. IP 12 and IP 15 describe this as the most effective way of communicating and exchanging ideas with people, as IP 12 describes: "I can only ever come back to these tours, because there are so many 'aha' effects and you can really watch people go: 'Oh, but I wouldn't have thought of that. ' So, in my view, that's the way to really reach people." Regardless of the format, the majority of respondents value face-to-face conversations, as described by IP 3 ("What has really proven itself in my experience is always the personal exchange") and IP 5 ("I think that face-to-face is always the most effective.") (IP 1, 2,3,4,5,10). For a third of the cooperatives surveyed (IP1, Ip 6, IP7, IP 14, IP 15), the general meeting is one of the channels through which they report on wind power or their wind projects. Other forms of direct communication include personal telephone calls to reach those who do not have access to the Internet (IP 1), an "information hotline" (IP 4) or a student cooperative (IP 2).

Digital Communication

Almost all of the cooperative representatives surveyed stated that they communicate digitally on the topic of wind power and wind projects, via their websites and by email. Eight of the surveyed experts from the cooperatives stated that they use mailings or email newsletters for their communication on wind power (IP 1, IP 2, IP 3, IP 9, IP 10, IP 11, IP 13). For example, all members are on the mailing list of IP 1 and IP 7. IP 3 also addresses interested parties in addition to members. Only two of the respondents provided information on the content of the newsletter. IP 9 informs about ongoing activities and new participation offers, IP 7 simply "when there is something interesting new to report." IP 7 therefore communicates at irregular intervals via the newsletter, IP 9 4-6 times a year. Two thirds of the experts surveyed (IP 1, IP 3, IP 5, IP 6, IP 7, IP 8, IP 9, IP 10, IP 12, IP 13) stated that they use their website for wind power communication. The remaining five also all operate a website, but did not say whether they use it to communicate wind power issues or their projects. IP 10 was the only one to state that they even set up a planning and a project website. IP 12 was the only one to state what communication on wind power topics looks like on the website. The cooperative of IP 12 uses blog posts, among other

things, for this purpose. IP 13 also stated that it has an internal area on the website that is used specifically for communication to members only.

Social media communication

Social media as a means of communication has not yet penetrated all cooperatives, but nine of the cooperatives surveyed (IP 1, IP 2, IP 3, IP 4, IP 7, IP 8, IP 9, IP 10, IP 12) use it to communicate about wind energy issues. IP 3 also sees the need for social media here: "Of course, digital platforms - whether it was Facebook in the past or more recently Instagram - are also an important medium." The platforms used include Facebook (IP 1, IP 4, IP 7, IP 8, IP 12), Instagram (IP 3, IP 8, IP 12), LinkedIn (IP 4, IP 12) and occasionally Mastodon, Bluesky, Threads and X. IP 1 uses social media to draw attention to events, IP 3 to provide information about new projects and IP 12 also to show images of projects. The use of social media for wind power communication is very different, IP 2 uses it to reach young people and says "the target group that tends to read social media posts is often satisfied with a very condensed version, they are not necessarily the ones who want to read a page and a half press release." IP 3 uses social media to a modest extent, while IP 5, IP 6 and IP 9 do not use it at all. IP 6 says: "I think we're a different generation. We do less of that. A lot of people ask us about Facebook or Instagram or something like that, but we're not set up at all." This is also a generational issue for IP 9: "Just as we have little to do with social media ourselves, the majority of our clientele also have little to do with it. Yes, and those who are on social media, how should I put it, don't expect us to do this for them." However, IP 6 and IP 9 see an increasing importance of using these channels as well. IP 9 has solved this differently in his cooperative: "The social media, which we older people are no longer familiar with and which we don't want to have anything to do with, is handled by our managing director, who does it well. IP 10 even has two colleagues in his cooperative who are responsible for social media. IP 4 sees a disadvantage in the communication of wind power projects in the fact that social media postings cannot be tailored to the local area: "I would say that this plays a subordinate role for local wind power projects."

Media Communication

For almost all of the interviewees (IP 1, IP 2, IP 3, IP 4, IP 5, IP 6, IP 7, IP 8, IP 9, IP 10, IP 11, IP 12, IP 13), press relations are an important means of communicating about wind power. Many rely on the local newspapers and occasionally also on regional and newsletters. Most of the interviewees attach great importance to press work and reporting. The local press in particular plays a central role for many. IP 3

says: "I still think the local press is a very important topic or a very important medium." IP 5 also thinks "the famous local press is very, very, very, very important at this point. And we always keep them up to date if we can." IP 9 says that the local newspaper in his region is a monopoly newspaper and IP 5 also describes the power of the local press for local public communication: "That also depends a bit on the newspaper, and local journalists have a huge amount of power, you have to say that. As a rule, there is one editor who writes for a place or a region. And if they, if they don't feed them well and if they, if there is no contact and no good atmosphere, then you have an additional headwind." IP 5 sees another reason for the importance of the press in the target group of his cooperative, which still reads more newspapers. National reporting only plays a role for a small number of interviewees (IP 1, IP 4, IP 10, IP 12). For IP 4, national reporting plays a role when it comes to federal political decisions and legislative amendments on wind power, which they then comment on. IP 10 takes a similar view, reporting nationally, like IP 4, primarily on the expansion of renewables in general. IP 4 even publishes some studies on this. IP 10 states, "It is not the case that we can say that this is really part of the strategy. It just happens when the topic spills over a bit beyond the local borders." IP 1 sees the associations as the right lever for national reporting on wind power. The interviewees state that the reason for communicating via the press is to inform local residents near a project (IP 1), especially when it comes to the implementation of a wind power project (IP 2) or generally to illuminate or present a wind power project or participation in a project (IP 3, IP 4, IP 6, IP 7, IP 8). IP 3 says: "Of course, the daily press is always a way of looking back at project launches and successfully implemented projects. So, it's more about communicating success." For IP 6 and IP 13, the motto is: "Do good and talk about it." Some of the interviewees (IP 2, IP 5, IP 13) also report that the press sometimes actively approaches them with inquiries. IP 2 and IP 5 believe that the newspapers are very interested in reporting on wind as a controversial topic. IP 5 says: "The local press is also, as you will know, extremely interested in the topic, because anything that is somehow emotional or that shapes a discussion in the community is of course great for them." IP 5 has already been invited to a debate with an opponent of wind power by the newspaper. Only IP 2 provided information on how press inquiries are handled, saying: "When the press calls us, you can say that much, they never wait long for an answer. So that's also our policy, we make sure that they are dealt with immediately and then set all the channels and gears in the company in motion so that it usually doesn't take longer than 24 hours, but it's usually two or three on average. So, they don't need to wait any longer than that. Nine of the 15 interviewees (IP 2, IP 3, IP 4, IP 5, IP 9, IP

10, IP 11, IP 12, IP 13) stated that contacts with the press are of great importance to them. IP 4 said: "Even if I repeat myself, my experience is that personal contact is always totally important, so it is not enough to simply send out a press release." Some have good and personal contact with the press and, as IP 13 reports, also see maintaining contact as important: "We are of course well networked here regionally and also maintain contact with the reporters or those who write it." Press invitations to background discussions, ground-breaking ceremonies, inaugurations or other events also play a role for some of the interviewees (IP 4, IP 5, IP 8, IP 10, IP 12). IP 5 says: "There are press conferences at regular intervals, where we provide general and broad information about what is being done." IP 2 sees difficulties with press work when it is not proactive, but reactive: "then you're always a bit of a chaser, I'd say." According to the interviewees, only IP 2 uses the medium of radio. At least IP 2, IP 6, IP 9 and IP 10 have already used regional and national television for communication on wind power issues or have already been reported on television.

Communication with Authorities

The cooperatives surveyed provided little information on communication with authorities regarding wind power projects. IP 1 reports that they communicate with the authorities by email and telephone. IP 2 distinguishes between approval authorities "What is different, of course, is the communication with the approval authority at the district office or something like that. It's about other things. It's about expert opinions. It's about system configurations etc." and local authorities in the sense of municipal administrations and committees, such as the local council. In order to maintain contact with the municipalities, it has municipal advisors "who are there especially for the municipalities, who go to the municipal council meetings, for example, and simply keep in touch." IP 7 names people from the city administration, mayors or the district administrator as his main contacts, with whom he is in good contact, as does IP 13: "As we deal with authorities on a daily basis, we are already in direct contact with the individual employees. We know exactly which people are important to us somewhere or are being approached. We do this through direct contact." IP 10 sees it as crucial to involve the local political decision-makers from the outset.

Analog communication

There are only a few findings from the surveys about print media for communication on wind energy topics and projects. IP 1 says: "We don't distribute flyers or anything like that." IP 8 reported on a flyer

distribution campaign, which, however, was not very well received. IP 4 distributed information leaflets in connection with the burning down of one of their wind turbines. IP 11 finds flyers useful in the village or in rural structures: "They often have very small structures with 70, 80, 90 houses, and this is done directly with flyers, for example."

Communication Channels

The range of channels used by the cooperatives for wind power communication is wide: events (IP 2, IP 3, IP 4, IP 6, IP 11, IP 14), social media (IP 2, IP 4), (local) press (IP 3, IP 4, IP 6, IP 8, IP 11, IP 14), website (IP 6, IP 8), newsletter (IP 6, IP 14), customer magazine (IP 2), flyers (IP 11) and information stands (IP 3). For IP 10, the website, newsletter and social media are in first place, followed by events and, in third place, the press. The main channels for IP 11 are the press and events. IP 6 sees the cooperative assembly as the main communication channel. IP 2 relies on the entire mix and has no preferred channel for communicating about wind energy projects and increasing the acceptance of these projects. All channels are also possible for IP 6. IP 15 does not currently use any channels for wind power communication and IP 3 states that it does not use a wide range.

Effectiveness of Communication Channels

When asked about the effectiveness of different communication channels for increasing the acceptance of wind turbines, IP 1 states that it depends on which target groups you want to address, IP 10 says that it varies from case to case. IP 1 also feels that the voluntary management of the cooperative restricts its ability to use the channels. IP 2, IP 6 and IP 10 find all channels important and as IP 2 describes: "it really is the mix that makes the difference." IP 3, IP 10 and IP 12 do not want to commit themselves or are unable to make a judgment, as IP 10 describes: "I would find it difficult to say that one channel or another was more successful." For IP 8 and IP 13, it is definitely the local channels that they describe as the most effective. Frequently (IP 1, IP 2, IP 4, IP 9, IP 10, IP 12), information events and citizen dialogs were mentioned as an effective communication channel. IP 12 considers such events to be super exhausting and annoying, but nevertheless very confidence-building. IP 2 considers the exclusive insights and information for the participants to be important. In this context, IP 5, IP 9 and IP 13 emphasize face-to-face communication as very effective, as IP 13 describes: "Of course, you can use all channels, but I think the personal channel is particularly important, that you can hear the board or the initiators in person and that people can ask questions." IP 7 also finds face-to-face communication to

be much more targeted than communication via the media. Furthermore, the local press and local media are also described as effective in increasing the acceptance of wind energy projects through communication. IP 1, IP 5 and IP 12 believe that the effectiveness of the media is primarily due to the target group, which still frequently reads newspapers. IP 12 also sees the wide reach and the opportunity to reach new people as well as "the advantage that you don't have to clean up afterwards" as reasons for the effectiveness of this communication channel. Compared to social media, IP 2 finds that a press release or press release can contain a much higher density of factual information than a social media post. However, social media is also seen as an effective way to increase acceptance, especially among young people. The advantages of social media communication are that it is simple, quick and can be used frequently (IP 10, IP 12) and that you can reach many people (IP 10). IP 12 sees the mostly negative comments and the lack of substance in a post as a disadvantage and IP 4 sees the lower local relevance. IP 5 believes that younger people do not need to be convinced of the benefits of renewables and therefore do not need social media and that it is a "noise organ". Contact via email or newsletters is also seen as effective by some, as they are quick and easy to use (IP 1, IP 10) and can therefore be used to target those who are already convinced of wind power (low wastage). Other effective channels for IP 10 are community newsletters and television reports, if you have the opportunity: "There was a blog post about it on NDR. It really made waves." IP 8 explicitly mentioned the distribution of flyers in letterboxes as ineffective.

Target-group-oriented communication

Target group-oriented communication does not play a major role for IP 9 and IP 12, as IP 9 explains: "There are no major considerations." IP4 states that he looks at which instrument is suitable for which target group. He sees older people with a good income as the main target group, but has not yet found the perfect channel for them. IP 2 considers social media to be much more suitable for Gen Z than information events, for example: "We get them better there." IP 4 also sees social media as a good way to reach young people. However, he has not yet been able to identify any successful communication on this channel. For IP 8, it is also important to know people's attitudes towards wind power in order to communicate in a way that is appropriate for the target group: "I need to know who I am talking to: are they supporters or opponents, friends or foes, open or not open, and I need to adapt my communication accordingly." IP 11 sees a difference in addressing citizens compared to addressing the press. IP 12 believes that it is important to address each target group in a fact-based manner, but also

allows himself to address them more loosely on social media. IP 2 sees a special feature in addressing those affected: "Well, with residents it is of course clear that it is about very specific project communication."

5.2. Core aspects of acceptance-enhancing communication

Communication Intensity

IP 1, IP 2 and IP 11 state that their communication on wind power issues has increased recently. Other experts surveyed (IP 4, IP 5, IP 10) also state that they communicate regularly and extensively. IP 4 states that communication on these topics' accounts for around a quarter to a third. IP 8, on the other hand, is of the opinion that it is necessary to communicate on certain projects in the wind sector, but not to repeat this every week. IP 12 says: "We could put out a press release every week, not every week, but we could also do a lot, we could constantly talk about wind power and somehow get coverage on social media with some catchy stuff. But then we would have a lot to clean up." IP 1 and IP 10 even state that they communicate on a weekly basis, especially when a new project is coming up (IP 10). IP 12 and IP 13 tend to write to their members at longer intervals, about once a quarter. For the majority of respondents (IP 1, IP 2, IP 3, IP 4, IP 5, IP 7, IP 8, IP 9, IP 10, IP 11, IP 12, IP 13), communication depends on which project phase (planning, construction phase or completion) they are in or whether there are any current projects at all, i.e. on an ad hoc basis. IP 3 says: "It's not regular in the sense that it's project-triggered." IP 12 does not have a fixed mode "where we say we want to communicate about it every X weeks, but we actually do it when there is something new." IP 9 handles communication during the general assembly and IP 12 does so whenever there is new image material from their projects. Only IP 2 reported on the course of communication, i.e. the increase or decrease in communication. In the approval process, "that's the background noise of communication", because sometimes not much happens. "When it really comes to the realization of such a wind turbine and such a wind project, then of course the communication increases," explains IP 2. For them, this is the time when the cooperative communicates most intensively about a wind power project. The peak is then passed and communication returns to the aforementioned background noise after the inauguration ceremony. And then again in between, for example when maintenance work is due. IP 10 believes it is important that communication is constant over a longer period of time and does not stop even after completion.

Communication Message

The most frequently played message among the cooperatives (IP 1, IP 3, IP 5, IP 5, IP 6, IP 7, IP 8, IP 9, IP 10, IP 11, IP 15) to increase the acceptance of wind turbines is the topic of citizen participation. This message is about the financial participation of people in wind energy projects and the promise that anyone who looks at a wind turbine should also be able to earn money from it, not only as an investor but also as an owner, as IP 11 describes. IP 15 says: "If we build and develop a wind turbine, then when it turns later, the citizens should look at it and say, okay, this is my wind turbine and it's for my wallet and my dividend and not some corporation or another investor, but that it remains in the hands of the citizens." IP 7 is certain that financial citizen participation makes up for the disadvantages of a wind turbine. The second most frequently mentioned message (IP 2, IP 3, IP 5, IP 6, IP 9, IP 11, IP 12, IP 13) is that of strengthening the business location and regional value creation. With this message, the cooperatives are concerned with the creation of jobs (IP 2), the involvement of local and regional service providers (IP 3) and rental income for landowners. IP 5 sees this as a decisive advantage over companies that do not come from the region: "It's not that some people throw wind turbines out of the sky and then carry the money bags away. Instead, we want to generate as much added value as possible locally. After all, that's what a cooperative can do." The message that wind turbines contribute to climate protection was mentioned with the same frequency (IP 2, IP 3, IP 4, IP 6, IP 9, IP 10, IP 11, IP 12). The respondents are concerned with reduced CO2 emissions (IP 2), the preservation of livelihoods (IP 3), renewable instead of fossil electricity (IP 4, IP 8) and the local contribution to climate protection (IP 10). IP 11 sees another clear advantage in climate protection: "If we all support renewable energies, we will definitely help to reduce the risks from the climate crisis. This may not affect us individually, but in the end, it will lead to significantly lower economic costs if we push ahead with the energy transition." Eight of the interviewees (IP 1, IP 2, IP 4, IP 5, IP 8, IP 10, IP 11) stated that the benefits for the local communities would play a role in increasing the acceptance of wind turbines. The specific messages are that the municipality benefits from lease income (IP 1, IP 2, IP 5, IP 11) - if the wind turbines are located on municipal land, from business tax (IP 2, IP 8, IP 11, IP 13) and - depending on the agreement - from the municipal levy (IP 1, IP 2, IP 8) of 0.2 cents per kWh produced. The message that wind power is needed for the energy transition is far less played out (IP 1, IP 2, IP 7, IP 10). IP 2 even has a special spin in this context: "This means that the region is also very energy transition-friendly and is going down this path with us. That is a message." Another message is that wind power ensures local energy production, meaning that the electricity does not have to be transported long distances (IP 1), that generation is

decentralized (IP 2) and that people have a direct connection to electricity production (IP 13). IP 15 adds a clear appeal to this message: "We need the energy transition locally and we can't afford to always just blame it on others and say okay, we think the energy transition is good, but not in our federal state or not here locally. That is already a communication strategy." In addition to citizen participation as a message to increase acceptance in the communication on wind power, the message "cooperative in community with democratic participation" also plays a role (IP 2, IP 4, IP 9). IP 2 summarizes the message as follows: "What one person cannot do alone, many can." Although it has a negative connotation, the justification of landscape impairment is also a message in the wind power communication of the cooperatives interviewed, as IP 9 expresses: "[We] say quite clearly that a landscape without wind turbines is more beautiful than a landscape with wind turbines. But that there are higher goals: Climate protection, cheap, clean energy and so on that justify it." Compensation for the area used is another message for IP 13, while IP 12 always sees the impact on nature in relation to tree felling work carried out for other purposes. One message that was mentioned sporadically is the energy demand (IP 1, IP 2) that Germany has as an industrialized nation, as IP 1 summarizes: "You just have to explain it to people, including the overall situation. So, I think it is often important to embed this question of wind energy in a meta-level. That you also explain: We need the energy. We need electricity. We are an industrialized country. We all need electricity." Other messages include security of supply (IP 2, IP 12), cheap electricity (IP 2, IP 9) and wind power as an efficient technology (IP 2). IP 8 emphasizes the suitability of renewables for grandchildren: "That's also the argument and communication, I just have to think about our children." There are also bold messages such as "We are the makers of the energy transition (IP 2)" and "Anyone who looks at a wind turbine should have a benefit (IP 5)." IP 2 and IP 4, who states: "I would say that part of the task is to tell positive stories and encourage people. That we can manage to create a climate-neutral future together." For IP 11, one thing is also very important: "The message must be, and this is how we communicate it, that there should be a windmill wherever a wind site is suitable and easy to connect."

Narrative

Narratives that the cooperatives use in their communication to increase the acceptance of wind turbines are "if you see a wind turbine from home, you should be able to participate in it (IP 1)" or "the energy transition is socially and politically desirable (IP 2)." IP 4 emphasizes that you can always tell the story from two sides: "Whether you say, now there's a wind turbine on my doorstep, it's totally ugly

and loud and the sea eagle that might have settled here in the past is no longer coming, or whether you say, cool, there's a wind turbine on my doorstep. I can even get involved. I'm somehow part of something bigger. I can promote the energy transition and my municipality can also build a playground from the business tax revenue. It's both the same case, so to speak, but a different narrative." IP 11 sees positive messages in particular as essential.

Communication Aim

The most frequently mentioned objective of communication on wind power among the experts surveyed (IP 1, IP 3, IP 4, IP 5, IP 10, IP 11) is to increase acceptance, as IP 3 describes: "Quite clearly: the first premise is to ensure a very high level of acceptance among the population in general." And linked to this, as IP 5 says: "As few places as possible where there is any kind of rift. So that this famous peace, the peace of the village or town does not suffer." A third of respondents see the creation of public participation as the goal of communication on wind power projects, as IP 3 explains: "The second step is to convince as many local people as possible to get involved by offering them the opportunity to participate." In this context, IP 11 also sees the communication of the citizen energy option itself as always playing a role for municipal decision-makers. To a certain extent, the goal of persuasion is also about acceptance. IP 1 breaks down exactly who his cooperative wants to reach with its communication: "But I don't want to convince everyone. We want to try to get these 60 percent of indifferent people behind us." IP 8 is also concerned with "creating enthusiasm" and generally recognizing wind energy as a sensible solution, as IP 12 states. Creating transparency is a goal of IP 4, IP 10 and IP 12, who adds: "We are also trying to make the combination so that it causes us as little clean-up work as possible, i.e. the capacities." Further objectives of communication on wind energy are to strengthen the expansion of renewables in Germany as a whole (IP 4), the economic success of the cooperative (IP 6, IP 11), clarification of false information circulating about wind power (IP 8, IP 11) and, last but not least, of course, the aim of implementing the wind energy projects (IP 9, IP 10) and collecting money from members for the projects (IP 12).

Enlightenment

For some of the cooperative representatives interviewed, one aim of communicating wind power and increasing acceptance is to clarify myths and false claims about wind power. IP 1 specifically tries to dispel these at events. IP 2 does this by means of a quiz, after which the audience is often astonished

by all the facts and figures. For IP 1, the only legitimate arguments against wind power are the impact on the landscape and the cast shadow. For IP 8, the background noise is also a factor when residents live only 800 meters away. He also wants to see a comparison with other infrastructure projects such as high-speed rail lines and put them into perspective. Arguments that the experts interviewed do not want to accept are groundwater contamination - IP 1 wants to see this in relation to single-family homes, for example, and shadows, the killing of birds - IP 1, IP 8, IP 12 and IP 15 also want to see this in relation to domestic cats, road traffic or glass panes. IP 8 is also uncritical of the sealing: "I say, almost nothing is sealed. So that's a joke for wind power." For IP 1 and IP 12, a frequently refuted false claim is the assertion that infrasound is harmful to health, although this has long since been refuted. For IP 8, another exaggeration by wind power opponents is "abrasion from wind turbine blades, what kind of pollution is that? And then I just say that a train travels many more kilometres and much faster or cars and there is abrasion everywhere, on every plastic bag, on every rubber tire and so on. What is this actually about? Is there really anything where there is contamination? I'm not aware of that at all. So that's just something where I say, hey, another new horse is being driven through the village." IP 12 also mentions another argument of the critics: "That they would always be at a standstill and the operating hours would be so low and they would never be economically viable. But then I also asked: Why should [we] build them then? That also contradicts itself. So, you build wind turbines that don't pay off at all. But you're getting rich and taking money out of our pockets. Exactly."

Emotional Address

The question of the use of emotional elements in communication is viewed very differently by the experts interviewed. IP 12 and IP 5 see that the emotionality arises from the debate itself, which is fuelled by the opponents of wind power, as IP 5 says: "That is a particular criterion of this whole debate about wind power, that it is very highly emotional and, in a flash, you can't get anywhere with facts and a normal exchange, it escalates quite quickly." IP 4 sees a problem on the part of wind power advocates: "I think people tend to take a very technical approach to the issue. But it's a totally emotional issue for people and it also needs a more emotional approach, I think." IP 5 also sees emotions as a more sustainable argumentation aid than facts. IP 1, IP 2 and IP 3 stated that they also use emotional elements. IP 11, on the other hand, does not think much of emotionality and ideology. IP 7 also states that they do not need emotional elements, but says in the same breath: "Nevertheless, the communication event or the press release, of course, also contains emotional elements." IP 9, IP 10, IP

12 and IP 15 take a more fact-oriented, factual and rational approach, as IP 10 says: "And then it's actually the case that we try to somehow achieve the most detailed and factual communication possible, i.e. to take out the emotional peaks if possible. Because communication is often very emotionally driven. And we try to objectify it to a certain extent." He also sees the solutions offered for the problem of climate change that are communicated as tending to be less emotional. IP 4 thinks they could incorporate more emotional elements into wind power communication in the future and IP 5 says "We're not doing it yet, but sometimes we get itchy fingers, so it's precisely these effects of climate change and climate heating on the landscape." The emotional elements used are intergenerational justice, i.e. the protection of natural resources for future generations. IP 1, IP 3 and IP 8 use this narrative style in their communication. For IP 5, the sense of community, i.e. the self-efficacy of a group of people to be part of the solution, is an emotional element in the communication. IP 7 sees the feeling of doing something good as a comrade with the expansion of wind power as an emotional element. The climate crisis is communicated by IP 8 and IP 10 as a negative setting, i.e. emphasizing the consequences of global warming. IP 3 formulates it positively: "Yes, emotionally, of course, in the sense that it is about protecting our natural resources." IP 5 and IP 11 believe that money, i.e. financial profit or the right to own a wind turbine, can also be emotional arguments.

Entry into Communication

At the time of communication, the majority of respondents (IP 2, IP 3, IP 8, IP 9, IP 10, IP 11, IP 13, IP 14) agree that they enter into communication at an early stage. However, the term early is defined very differently in this context. For example, IP 2 and IP 9 state that they communicate "right from the start" and IP 3 "at the right time" without defining it in more detail. IP 8 states that it "must always be in coordination with the municipality" and IP 3 and IP 11 also start communicating when it is clear that the land is secured or as soon as they "see a sufficient chance of approval (IP 11)." IP 3 says that "the times are relatively different" as to when his cooperative starts communicating. IP 10, in turn, makes contradictory statements. IP 4 sees imponderables, such as a schedule that cannot be adhered to, as a difficulty in getting involved in communication. For IP 12, the entry point for communication is the application in the tendering procedure. IP 2, IP 3, IP 6, IP 10, IP 11 and IP 14 enter into communication as soon as they are in the planning phase and project development, as IP 14 states: "as soon as the planning, the idea is a little more mature and leaves your own four walls, by involving and including municipal committees. From that point on, it is important to at least invite and inform the public in

advance." For IP 3 and IP 10, communication begins at the time the land is secured and for IP 13 and IP 15 it is clear in connection with the acquisition of land: "As long as the signature is not dry, I don't need to stir up the dust yet (IP 15)." IP 1 thinks it is important to let citizens know that something is planned even before the approval process. For IP 12, communication starts when everything is in the bag, i.e. "when it can no longer be prevented (IP 12)", i.e. when no more objections are possible. IP 4 states: "So far, we have always communicated earlier, when everything is ready." In future, however, he would like to start communicating earlier, "because then people simply feel more involved" and sees the start of construction as a good time. IP 7 has communicated on exactly one project so far and states the latest point in time for starting communication of all: "We started pretty much exactly when the project was already underway or almost underway." IP 5 thinks that "you can also inform too early. Yes, you can also initiate an issue too early, because there is a danger that if there is too little information, a negative development can then take on a life of its own." He therefore considers a tactical approach to be important, with "a great deal of sensitivity" and a feeling for the right time. IP 12 sees less scope for influencing the timing himself. IP 12 and IP 9 state that it also depends on what happens in the public discourse, meaning that they only have limited influence on this. IP 9 says: "As soon as there is some kind of public stir. Because from then on there is a risk that it will be discussed publicly. And then the keywords have to stand and should not be dominated by wind power opponents."

Transparent Communication

Two thirds of respondents (IP 1, IP 2, IP 3, IP 4, IP 6, IP 7, IP 10, IP 12, IP 13, IP 14) consider transparency in communication on wind power to be important or very important. IP 14 says: "Transparency is a very decisive factor." For IP 10, it is clear that "the more transparent, the more open you are, the greater the acceptance." IP 7, IP 9, IP 11 and IP 13 have the greatest possible transparency and openness as a basic attitude, as IP 9 describes: "Maximum transparency, that is, we always insist with partners that they disclose all information. This also works and we publish everything that is accessible to us." For IP 1, IP 6, IP 8 and IP 9, the implementation of transparency in practice is such that "everything is put on the table", as IP 6 says, and as IP 9 states, "you can at least always point out that information has been provided. You can point out that no information was withheld." For IP 2, IP 8 and IP 13, transparent communication forms the basis as a means of building trust, solving problems and taking concerns seriously. For IP 5, credible transparency is based on practical experience and verifiable data: "We can use our experience and the data and operating results we have gathered over the years, including

financial data, to say that wind power is not worth it. Then we can say yes, we've been in the black since the very first minute. So, I think that's a credible form of transparent presentation, because it's not based on some internet knowledge or some links, but we have the information ourselves." For IP 11, internal transparency towards its own members is extremely important, while external transparency is reduced to a minimum. IP 2, on the other hand, takes the opposite approach: "Our cooperative is authentic. We don't give Group A the information and Group B the information. It's communicated in the same way." For IP 5, the greatest possible transparency applies to the internal project advisory board, but sees conditions for external transparency: "Despite the need for transparency and openness, you have to go public with a clever concept at the right time and with the right people and the right constellation." IP 12 takes a similar view. IP 2 sees local authorities and their decision-makers as a particular target group for tolerance, so that they are informed at every stage of the project. However, transparency also has its limits for the experts from the cooperatives interviewed. For IP 5, this limit is exceeded when it comes to the decision-making phase for the planned project. IP 8 also sees no added value in commenting publicly as long as the objection period is not yet over. For IP 7 it is clear: "There are limits to transparency at some point, however, when it comes to economic parameters, because we will not publish what we have earned per year with the wind turbine." Other reasons for excluding transparency are if there are confidentiality agreements (IP 9) or if the information is linked to data from suppliers or customers (IP 10). IP 11 sees little added value from transparency "the further away the projects, the further away the people or stakeholders involved, the press, especially the press, television are from the topic." For IP 12, showing visualizations of wind power in the forest offers no added value, as some people are initially shocked by the extent of deforestation. IP 10 also does not believe "that there are necessarily, let's say, plus points for acceptance". For many of the experts interviewed (IP 2, IP 4, IP 6, IP 12, IP 13, IP 15), there is no question that wind power also involves problems and that these should be addressed openly as IP 4 says: "that you don't just gloss over things, so to speak, but also say where there are problems." For IP 4, there were also two specific cases. Firstly, when a wind turbine burnt down, "of course, it was also about people feeling well informed and knowing what had actually burnt down, how things were going, what the next steps were, how the removal was going, whether anything was dangerous." Another case was that a white-tailed eagle had settled at a planned repowering project, which was an obstacle, but was communicated nonetheless. However, it is usually important for the interviewees not to focus on the negative aspects despite

everything (IP 4, IP 6, IP 12). For IP 2, IP 8, IP 10 and IP 12, transparency is also a mandatory task to a certain extent, as IP 10 describes: "So we also want to prevent something from popping up at some point in our own interest that we haven't considered and which could then boomerang afterwards. We are interested in transparency for that reason alone." This is also intended to take the wind out of people's sails and make them realize that they are not being taken for a ride (IP 12).

Importance of Communication

The respondents (IP 2, IP 3, IP 4, IP 5, IP 6, IP 9, IP 11, IP 12, IP 15) predominantly rated the importance of communication for increasing the acceptance of wind energy projects as high to extremely high. IP 5 believes that "it is, I think, a bit of a decisive means to success, even if not a guarantee, of course. But communication and, above all, clever forms." IP 15 also sees it this way: "Communication for wind power is the be-all and end-all. I can't get a project off the ground without communicating it and communicating it properly." IP 9 does not see communication as the only decisive factor, but as important alongside other aspects: "In addition to the factual substance of the projects and the open handling of all potentially problematic aspects of a project, i.e. location, too many turbines, too high, not lucrative enough. In addition to all these things, communication is certainly crucial." IP 12 speaks from experience and says: "Often it was all a communication problem, i.e. not informing people in good time, not taking them along." IP 10 is also not sure how important communication is in increasing acceptance of wind power, while IP 8 takes a completely different view and assumes that communication only plays a small part. For IP 1, communication is particularly important for a specific target group, the indifferent. IP 4 also sees the importance of communication in the fact that the fossil fuel lobby communicates a great deal and believes that the renewables sector and especially cooperatives or community energy associations have a duty to "tell positive stories and show why this is good, why it is important that we do this." He believes it is about shaping the narrative through communication and the way people view a wind energy project, whether they benefit from it - through the cooperative implementation - or whether the wind turbine is simply on their own doorstep.

5.3. General implications for cooperative and wind power communication

Comparison of Energy Resources

A large majority of the surveyed experts from the cooperatives (IP 1, IP 3, IP 5, IP 8, IP 10, IP 11, IP 12, IP 13, IP 15) state that they communicate wind, water, solar and biogas as complementary renewable

electricity generation options and that a mix of all of them is needed to ensure security of supply. IP 1 confirms this: "So these forms of energy work synergistically and wind energy is simply an important part of the portfolio. We can't do it with solar energy alone. Nor can we do it with wind energy alone. Nor biogas or biomass. But we can do it with the interaction of all forms of energy, supplemented by a battery." The interviewees also stated that they would not play the renewable energy sources off against each other. Nevertheless, compared to photovoltaics and biogas, the argument of land consumption is mentioned in the communication of some cooperatives (IP 3, IP 5, IP 11, IP 12, IP 13, IP 15), as IP 3 describes: "That with wind power you naturally have the advantage of being able to produce significantly more energy over the year with a much smaller footprint or, let's say, with a much smaller space requirement than, for example, with photovoltaics or even with biomass plants." The high efficiency (IP 5, IP 12) and the more lucrative profit margin (IP 9) are cited as further arguments in favour of wind power in the communication. IP 8 argues in favour of photovoltaics: "Wind power is simply more difficult to get going, longer supply chains, longer times (...)." In comparison with fossil fuels, these arguments play a role in communication: emission-free electricity production and CO2 savings (IP 3, IP 7, IP 10, IP 12), we are not a country with enormous mineral resources and raw materials but with sufficient sun and wind as an energy source (IP 6) and in this context make us independent of Russian gas or hard coal (IP 4), wind power is easier to dismantle than a coal, gas or nuclear power plant (IP 2, IP 6) and does not burden the environment with pollutants like coal power (IP 6) or has the lowest environmental impact in relation and enables more species protection through climate protection in the medium to long term (IP 5, IP 12). Wind power is "one of the cheapest and most profitable forms of energy supply", as IP 12 argues in its communication in favour of wind energy. Furthermore, wind energy conserves resources and produces relatively little waste (IP 13). IP 2 and IP 4 also use the following as an argument to increase the acceptance of wind energy: "Nobody wants to live next to a nuclear power plant or a coal-fired power plant, I think you always have to be aware of that", as IP 4 says. IP 2 prefers to concentrate on communicating the benefits of wind power rather than comparing it with fossil fuels, and IP 5 and IP 15 also do not want to talk about fossil fuels.

Importance of Citizen Participation

Citizen participation as a communicative message to promote the acceptance of wind turbines is a very decisive argument for all interviewees. IP 2 says: "For us [public participation] is definitely the biggest [factor]. That is one of our main messages. It's in our DNA. IP 7 also says that "the cooperative approach

has a good influence because, here we are talking about citizen participation, and I have already said that citizen participation contributes significantly to the acceptance of wind turbine installations. IP 10 explains: "These are two aspects that are helpful in terms of communication, but also of course in terms of the direction of the entire project, so that we can increase acceptance."

Communication Performance Measurement

For the most part, the cooperatives do not measure the success of their communication and the influence on the acceptance of wind energy projects. IP 1 says "it's a bit of a try and error process", IP 2 explains that the response to the communication can be recognized by how much the press reports or how the topic is discussed in local council meetings. IP 3, IP 10 and IP 13 find it difficult to assess this, as it is difficult to compare (IP 3). As a small, volunteer-run cooperative, they state that they do not use any monitoring tools or research. IP 8 and IP 10 are only able to judge the success of communication and the associated increase in acceptance for wind energy projects according to whether a project was ultimately successful or not. However, IP 10 is also unable to understand whether the approval of a project, for example in the local council, was due to the communication or to the financial benefits for the municipality. IP 9 measures the success of communication "through steadily increasing membership numbers" and "through enormous collection campaigns." IP 11 and IP 12 can only perceive the success of the communication. IP 12 also states that they have not yet given it any thought. Only IP 4 says that they use a media monitoring tool to measure communication success in order to measure reach and what share of voice they have compared to other providers on the market.

Stakeholder Involvement

When asked about joint communication to increase the acceptance of wind energy projects, almost all cooperatives stated that they were "constantly in dialog (IP 2)" with various stakeholders (IP 1, IP 2, IP 3, IP 4, IP 5, IP 6, IP 9, IP 10, IP 11, IP 13, IP 15). However, the cooperatives are rarely concerned with joint communication (IP 11) or cooperation in communication (IP 8). The exchange with political representatives, such as local party officials, local councillors, mayors or members of the state parliament, tends to take place bilaterally or directly or in the context of local council meetings. IP 9 says: "By constantly meeting with them, as far as necessary and as far as possible, exchanging ideas, providing them with our materials, calling, landscape conservation, as Kohl once called it." For IP 2, cooperation also means filling supervisory board positions with local political decision-makers. So, it's

about information and not communication. IP 5 considers cooperation with the mayors to be very important: "Experience shows that mayors are the key figures." IP 1 involves political representatives in communication by inviting them to information events and involving them on the podium. The municipalities as such and the administration are also involved. Most cooperatives consider it important to engage with environmental organizations such as BUND or NABU (IP 1, IP 2, IP 3, IP 4, IP 5, IP 10, IP 11, IP 13, IP 15. However, only IP 4 describes real cooperation in communication with them: "If, for example, you have a project where you can communicate some success stories together with BUND or together with other environmental NGOS, I think that's really valuable." IP 1 and IP 2 include the project planners in their communication (events). Bilateral discussions also take place with landowners (IP 3, IP 11). Local associations also play a role in increasing acceptance (IP 4) and communication (IP 10). IP 7 and IP 12 stated that they relied entirely (IP 12) or partially (IP 7) on other participating cooperatives for communication. IP 5 and IP 12 also like to use a project advisory board with all stakeholders or a round table to discuss projects

Visual and Textual Means

When asked to what extent the cooperatives use visual aids to increase the acceptance of wind energy projects, these were almost universally described as positive and important. IP 5 says that visualizations are generally often used for the effects of wind turbines and IP 9 says that it is now standard practice. First and foremost, turbine visualization already plays a role in the approval process, as IP 1, IP 3, IP 8 and IP 10 state. However, IP 1 says: "But that's all done by the project planners, we have nothing to do with it. It's too time-consuming and we can't represent the costs." IP 3 also says that they have no tools for this. In addition, such visualizations also play an important role for wind power opponents, as IP 1, IP 5, IP 10 and IP 15 report, but according to the interviewees, these rarely correspond to reality, as IP 1 says: "The wind power opponents, the wind turbines are always black and they are always much larger and usually there are also many more wind turbines than were actually planned." IP 5, however, sees an advantage for the visualizations made by professionals, as they appear more professional true to scale. IP 10 does not withhold the visualizations of the turbines for reasons of transparency, but nevertheless considers it questionable whether such visualizations can really help to increase acceptance due to the real size of the turbines. IP 1 considers it to be conducive to acceptance if the installations are realistically simulated. IP 9 says that such a visualization can trigger different things in people: "They regularly lead to shock-and-awe. So, people are either amazed at how nice it looks or the

exact opposite." IP 4 says that it depends on how something is visualized, in a bright and friendly setting or a gloomy one. IP 12 also finds images of wind turbines rather less suitable, as viewers associate this with tree felling. However, most cooperatives work with images. IP 7 says: "Images play a central role." IP 2 tries to work with professional images and drone footage. IP 3 finds image material helpful for digital channels, IP 7 for presentations at information events. IP 9 also urges his partners to use visualizations. IP 10 once had an illustrated book produced specifically to show wind power in an aesthetic setting. IP 10 also states: "The more concrete a project becomes, the more we naturally use the images." IP 12 works with visual material primarily when it "falls at their feet." Visual material also plays a role for social media (IP 4, IP 8, IP 10, IP 12), for which IP 12 considers visual material to be crucial: "On the one hand, of course, you always need visual material, so you can forget about social media posts without images." Video material is also used (IP 2, IP 8). IP 2 also uses illustrations and infographics. According to the interviewees, there are several reasons for the importance of visualizations: many only look at the images (IP 2), visualizations can help to present figures, data and facts in a more comprehensible way and make dimensions tangible (IP 2, IP 4), support the imagination of wind energy projects (IP 3, IP 5, IP 12, IP 13, IP 15) and images have an emotional effect (IP 4). In addition, an image can break up longer texts visually, as IP 13 says: "Pure text doesn't help, you can write something nice, but as soon as people have to read for more than 30 seconds somewhere where the text goes on for two pages, it doesn't work anymore. We have to have pictures in between to experience something. Then we'll keep reading." This is also the view of IP 12. IP 13 states that they are working on a virtual flight through a wind turbine specifically to make it easier to experience. A limitation for the visual presentation is if the costs and effort are not affordable for a cooperative (IP 3) or there is a lack of appropriate technical equipment (IP 8). IP 7 also points out that a video must not be too promotional so as not to scare off viewers. IP 11 says that it is increasingly finding its way into their cooperative thanks to younger colleagues. IP 6 says that his cooperative could do this, but that they have not needed it so far.

Text communication also plays a role in communication for the cooperatives. IP 10 and IP 13, for example, state that they always use both. IP 6 states that they mainly work with text in communication and for IP 3, IP 9 and IP 12, the focus is also more on text in communication. IP 2 says the following about the use of text in communication: "We also always work with accompanying text and I would say more like the average PR does today." For IP 10, text is particularly relevant in the early stages of a

project: "Yes, I think it's in that area, in the early days of communication it's already text-heavy, I would say, because we just can't really show much there yet."

5.4. Challenges and obstacles in communication

Communication Challenge

The cooperatives' problems in communicating about wind power are, as IP 2 describes, "diverse in nature." The biggest communication challenge are the opponents of wind power, either individual residents (IP 4) who are resisting, local politicians (IP 4) or organized groups such as citizens' initiatives or even groups financed by Vernunftkraft, behind which IP 8 sees fossil fuel companies: "Money is being pushed in to spread disinformation and lies." He sees an organized movement that interferes, whether affected or not. As the debate is being conducted very emotionally by the opponents of wind power (IP 10) and they are setting the tone (IP 5), IP 5 asks himself for his own communication: "Are we going to the same level as the opponents?" IP 11 describes the problem that many cooperatives have: "What challenges us in communication is fake news, false facts, myths and purely emotional resistance." These include false statements about infrasound, shadow flicker, property value reduction (IP 9), the killing of birds and bats or even large-scale political discussions about blackouts caused by renewables or the fundamental questioning of the energy transition. These debates are often held on social media (IP 9, IP 13). IP 13's approach is therefore: "We try to shut down citizens' movements or things like that at an early stage." However, IP 2 and IP 5 also see difficulties in the question of the right communication on the impact on the landscape even without the wind power opponents. And the impact on nature and the impairment of species also poses communication challenges for IP 2 and IP 4, for example, as IP 4 describes: "I don't find it very easy with the ecological benefits, because of course it can't be denied that compromises have to be made when it comes to species protection and nature conservation." IP 3 sees a further difficulty in the fact that if you are not directly on site as a cooperative, it is difficult to grasp the mood of the people in order to adapt communication accordingly. IP 2 was able to report on three situations that caused him difficulties in communication through no fault of his own: a broken wind turbine blade belonging to another operator in the vicinity, turbines built too close to residential buildings, also by another operator, and maintenance work on new turbines. As the local people did not differentiate here, it was up to the cooperative and they had to clarify the problems. Budget and schedule are also incalculable for IP 4 and cannot always be adhered to. Internal factors can also cause difficulties in communication: if the team does not agree on the procedure (IP 4), if the team is in a

restructuring process (IP 2, IP 4), if there is a lack of know-how and resources or if team capacities have to be planned appropriately (IP 11, IP 12). IP 4 thinks: "But you also have to be careful not to talk yourself down or contribute to these energy sources being talked down." IP 7 had no problems with communication because the wind turbines in which his cooperative is involved are not located in his catchment area and therefore did not affect anyone in his area.

Communicative Handling of Criticism

The way in which the cooperatives surveyed deal with criticism and problems in communication varies, although most of them deal with them openly. IP 4 summarizes the difficult situation in which the cooperatives find themselves in terms of communication: "I think you have to find the right balance; it's a balancing act." In any case, IP 1 believes that it is important to keep calm and refute the corresponding false allegations and to do so as objectively and factually as possible (IP 10) and refute them with arguments (IP 13), as IP 9 says: "So moralizing, as I said, I've already said avoid it, counter as objectively as possible and expose the other side in their irrationality, so to speak. As far as possible without pointing fingers and otherwise remain sober. Sometimes go on the attack, sometimes retreat, depending on how things are going." The majority of the experts surveyed believe it makes sense to openly address the problems associated with wind power. Among other things, the issue of landscape change should be mentioned here, or the issue of placing an industrial plant in a place where there was nothing before (IP 1, IP 6, IP 8, IP 10) repeatedly plays a role. IP 8 thinks this aspect needs to be communicated openly: "You meet people and put something where there was never anything and, in this respect, and the thing is not small, you can see it everywhere. It's an intervention, of course." IP 10 says that there are also differences of opinion as to whether this intervention is necessary: "We accept the other opinion and we try to keep it to a minimum, interventions in the landscape and explain this with the necessity that we need the facilities." IP 10, IP 11 and IP 13 then address the necessity of the intervention for the noble goal of the energy transition, i.e. put it into perspective. IP 2 and IP 10 see no alternative to openly addressing the issue, as IP 2 describes: "There's no point in keeping quiet. It causes frustration and that's why we're more I would say almost offensive. Sometimes on the move. We'd rather come clean right away and say that it could be difficult or there could also be criticism, like we find out later and then people say why didn't you warn us." For IP 2, IP 3, IP 4, IP 10, IP 11 and IP 12, it is also important to take people's (partly justified) worries and concerns seriously, as IP 11 describes: "When it comes to really serious concerns, sound, shadows and the oppressive effect, yes, we really

take that completely seriously." The aim of communication is then to dispel the concerns (IP 2), explain the background (IP 11), place the concerns in a wider context of necessity for the noble goals of the energy transition (IP 3) and, above all, to communicate respectfully (IP 4) and on an equal footing (IP 12). However, IP 10 and IP 12 set limits to this, as IP 12 says: "I agree that you don't have to take every abstruse argument seriously." IP 2, IP 9, IP 10, IP 11 and IP 12 also think it is important to proactively address the critical points, as IP 10 states: "I don't think we have any choice. We have to address them openly, because they are also addressed and it is always better if you address them yourself from the outset." IP 12 otherwise sees the danger of being put on the defensive. IP 1 has a different view on this. He thinks it's okay that the negative aspects come automatically and therefore sees no need to address them proactively. IP 3 also takes a reactive approach to communication in these cases, as he does not necessarily see them as negative. For IP 13, it is also important to establish how much resistance there is in the first place and whether proactively addressing negative aspects doesn't create problems for yourself in the first place: "If there are two people, then you can only really open a big can of worms by really talking to them."

Miscommunication

Six of the experts interviewed (IP 2, IP3, IP 5, IP 7, IP 8 and IP 12) do not see any mistakes in their communication on wind power or that anything has gone wrong so far, as IP 6 explains: "Good luck, good luck, not so far. I don't know that anything has gone wrong with the communication." IP 5 says: "I think something always goes wrong." And IP 10 in particular can report on a whole range of things that have already gone wrong in communication about wind power in their cooperative. IP 1 and IP 5 report that they were too emotional or that they got involved in the emotionality of the wind power opponents. IP 1 sees an imbalance in communication if the willingness for dialog between opponents and supporters is lost. Mistakes that can happen in communication include, for example, a misjudgement of the situation and not expecting such enormous resistance (IP 3), the other side being overwhelmed by their irrationality (IP 9) or the local mood being misjudged, as IP 10 reports: "Then we didn't really grasp this, the mixed situation in this community. I think that the local knowledge, the knowledge of the political structures, the small-scale structure, well, there was one main town and I think five or six incorporated sub-towns, and they don't really get along with each other. There was quite a lot of controversy and I think we misjudged that in our communication." In this case, the IP 10 cooperative relied too much on its local partners. IP 10 also missed the right target group approach and

addressed younger people too late. IP 4 has also had to row back in its communication after one of its wind turbines caught fire and they received incorrect information from the manufacturer. IP 8 says that a statement has sometimes been sent out too early, while IP 12 says that communication is sometimes too slow. IP 11 also reports that people have sometimes been overwhelmed by oversizing the project: "Firstly, I would never plan like that again and I would never communicate like that again."

Handling Media Criticism

Only IP 1, IP 4, IP 8 and IP 10 have experienced problems with negative press coverage, as IP 1 reports: "Yes, it happens from time to time." For IP 8, it is more the negative reporting in general against wind power and IP 10 has had bad experiences due to one-sided reporting. IP 4 got into this situation through his own fault due to an initially false statement and explains that you simply have to deal with it honestly. IP 9 and IP 10 have to contend with very critical (IP 10) and climate change denying editors (IP 9) at the local newspaper. IP 5, IP 11 and IP 12 see the problem more in the fact that false or irrational things are often claimed in the newspaper. IP 11 says: "That's bad. But that's not negative campaigning. You just have to say that people are stupid." IP 1 and IP 13 urge correction or counterstatement in the event of bad press. IP 13 chooses a different approach in response to negative reporting: "We like to invite the people who have reported negatively about us and show them what we do on site." IP 5 says: "In the beginning, we were always outraged if it didn't say what we wanted it to say. In the meantime, I think we've become a bit more relaxed, because the press has to take both sides into account, of course." In the event of a negative letter to the editor, IP 11 also chooses to look past it calmly. So far, IP 2, IP 6, IP 9, IP 11, IP 12 and IP 13 have had (almost) no problems with negative reporting.

Degree of Professionalization

Most of the cooperatives surveyed have few to no full-time employees working in communications. This is also reflected in the degree of professionalization, as IP 1, for example, admits: "We don't have a public relations department in that sense. So, we are a bit overwhelmed, that's true." This low level of professionalization is reflected, among other things, in a lack of various tools that make work easier, for example for communication monitoring or plant visualization (IP 3), a lower level of commitment in the area of social media work due to a lack of know-how, money and resources (IP 3, IP 11), fewer financial resources available for public relations work (IP 8), less manpower for communication work (IP 8) and spontaneous actions without major strategic considerations in communication (IP 9, IP 10).

IP 9 says: "There are no major considerations. We are spontaneous heroes." IP 10 in turn states: "That's the way it is, a lot of it is still chance." IP 11 would like to be able to do more with regard to social media work, but sees no way of tackling this due to his lack of affinity and the fact that the team is already working to capacity. He says: "If you do it, you have to do it professionally. That's what we expect from our work. And as I said, we're a long, long way from that." IP 12 believes it is reasonably well positioned strategically, but notes that the cooperative is too small to think this through down to the smallest detail.

Communication Feedback

The majority of the experts surveyed (IP 2, IP 4, IP 5, IP 6, IP 9, IP 10, IP 12, IP 15) stated that they generally receive rather positive feedback on their communication on wind power. Among other things, transparent, open and honest communication is appreciated (IP 2, IP 4, IP 9, IP 15). For IP 5, the project advisory board is particularly well received, while for IP 10 it is the participation model, which was presented in a television report and generated positive feedback. IP 2 state that the feedback is at least not negative, which is shown for IP 2 by the fact that they do not receive any angry letters from readers and the basic attitude among the population is good, for IP 4 by the fact that nobody complains and for IP 9 by the fact that there is little headwind from a small number of wind power opponents. For IP 2 and IP 5, the positive feedback is reflected in the recognition and support for their work in the area of wind power, as IP 2 says: "The feeling is more that people are proud of it." For IP 3, IP 6, Ip 12 and IP 13, the positive response to wind power communication is reflected in successful projects, rising membership numbers and well-running fundraising campaigns for projects, and for IP 10 in the commitment and dedication of local people to wind power projects. IP 1 and IP 3 state that the feedback is manageable, as IP 3 says: "It's not as if we get a lot of feedback." Only IP 10 had any real criticism of communication, due to the failed referendum and the incorrect assessment of the local mood. IP 12 has occasionally received negative feedback due to planned or implemented wind power projects in the forest. IP 4 says that "of course, it could also be that someone was annoyed and didn't say so." Due to its local roots, IP 13 always receives feedback directly: "Of course, if you talk to people in the village and are somewhere in the pub or somewhere in the sports club or somewhere else. They already tell you what's going on."

Non-communication

IP 14 and IP 15 both stated that they had not really communicated about wind power to date, as IP 14 explained: "We have no communication about wind power as such because we are not building any turbines."

6. Discussion

6.1. Communication mix as the key

The general implications for cooperative and wind power communication serve to classify and explain the connections between wind power communication and general communication. The aim here is to get a feel for the type and manner of communication, as there is little literature on the communication of energy cooperatives and even less on communication about wind power in a cooperative context.

The results show that direct contact in communication is seen as extremely important for providing information on wind power issues and ultimately increasing acceptance of the projects. Information events are particularly appreciated by the cooperative representatives. However, it is also understandable that some of those surveyed stated that such events are annoying and sometimes even harmful, namely when the atmosphere is heated. IP 5's approach of deviating from the classic frontal event and organizing themed tables therefore seems promising, as people are in a face-to-face conversation and certainly very few would start shouting at their counterparts in this context. Another option is to organize information stands, as IP 3 considers useful for its cooperative. Lautermann et al. (2016, p.69 f.) also see this direct communication as a good format for cooperatives, albeit primarily for recruiting new members. As direct contact is highly valued by all cooperative representatives, but information events have the potential to escalate, other ways are a good opportunity to engage in personal exchange, as the concepts of some cooperatives show. These rely on completely different activities such as ground-breaking ceremonies, community festivals, inauguration celebrations, experience days or an open day. However, this involves more effort and needs to be well prepared. There are also indications in the literature that direct exchange and information formats are important in order to create spaces for a dialog in which positions can be argued and disputed (Borch et al., 2020, p.2). Frank Brettschneider sees direct conversation with people, in this case in the case of large infrastructure projects, which can also include wind power, as irreplaceable in order to place one's own core messages and enable dialog (Brettschneider, 2014, p.61).

In the digital age, it is important that a cooperative is also active in the digital space and provides information about its wind energy projects on the Internet or uses it as a channel to increase acceptance for wind energy projects. A website is therefore a must. The cooperative representatives surveyed also like to use newsletters and mailings. A good option could also be to have your own project website, where you can provide comprehensive information on this or that wind energy project. Brettschneider (2014, p.61) also sees a website as an important channel for providing information about (infrastructure) projects. Borch et al. (2020, p.2) also consider emails, websites and blogs to be important as part of target group-oriented communication and as an incentive to participate in a wind project.

The use of social media for communication on wind power topics, as well as the general use of social media in energy cooperatives, has been little researched. The use of these channels by the cooperatives is not very targeted or professional. The cooperatives surveyed predominantly state that they use social media, but in some cases only with little effort. Very few cooperatives have employees for this purpose. Only IP 2, IP 4 and IP 10 have their own team for social media work, but they are also among the larger German energy cooperatives with over 13,000 (IP 10) or over 42,000 members (IP 4) or have been in existence for a very long time and originally started as grid operators (IP 2). However, social media plays an important role in reaching a younger target group in particular, as some of the interviewees also noted. The difference between what is necessary and what is actually done is certainly also related to a generational difference, both in the membership structure and the generally older age of those responsible for communication in the cooperatives (average age 55). However, this average age is further reduced by the five cooperatives that have full-time communications staff. IP 9 reveals what the literature also confirms: the members and those who are involved in the energy cooperative environment are mostly older men, with an academic background and a good financial cushion (Radtke & Bohn, 2023, p.11) who cannot and do not need to be reached via social media or do not expect to be reached. Lautermann et al. (2016, p.118) recommend the use of social media to draw attention to cooperative activities, especially those cooperatives that operate in an urban - and therefore presumably diverse and younger - environment. In rural areas - and therefore presumably with a more heterogeneous and older population structure - Lautermann et al., (2016, p.118) see less sense. They also see the effort that presumably results from well-considered and targeted social media work for smaller cooperatives. However, Borch et al. (2020, p.2) also see social media as important for wind

power communication in particular. When it comes to increasing acceptance, it is therefore also important not to leave social media to the wind power opponents who mobilize via these channels (Reusswig et al., 2016; cited in Borch et al., 2020, p.2). Otherwise, there is a risk that the opinion of wind power opponents will be seen as the majority opinion (Barry & Ellis, 2010; cited in Borch et al., 2020, p.9). In connection with large infrastructure projects, Brettschneider (2014, p.61) also recommends using social media. Ultimately, social media is a powerful, universally applicable and easily accessible communication tool and is very important due to its potentially large influence on the implementation of wind energy projects (Borch et al.; 2020, p.2). However, the interviews with cooperative representatives reveal that this importance or influence has not yet been sufficiently recognized due to little targeted use or non-use.

Unlike social media work, press work is a frequently used means of communicating about wind power and increasing acceptance. Local newspapers are particularly important for cooperative representatives, not least because they often have a monopoly position in the local media landscape and are still widely used due to the demographics of the target group of cooperatives. Supra-regional reporting only plays a subordinate role. Wind power is naturally also an interesting field for the press itself, as it is to be expected that there will be tensions in society due to the low level of acceptance in some areas. Good contacts or a good exchange with the press is therefore also of great importance, as many of the cooperative representatives also note. For Brettschneider (2014 , p.61), press work is also a piece of the puzzle for the broadest possible communication to increase acceptance of infrastructure projects, including the construction of wind turbines. Television and radio as part of media communication for the purpose of increasing the acceptance of wind power are not particularly emphasized, neither by the interviewees nor in the literature.

The cooperatives' communication with the authorities on wind energy projects is a special area, as it is more of an overarching area of communication and this part has less of a direct influence on increasing the acceptance of wind energy projects among the population. Correspondingly few findings emerge from the results on this communication. Authorities play more of a role in the approval processes, turbine configuration or site selection. One important aspect mentioned in the expert interviews is involve local political decision-makers, municipal administrations and authorities from the outset and to create a good basis through communication.

Print media for communication on wind power topics and projects do not play a significant role for the cooperatives surveyed. Nevertheless, for Brettschneider (2014 , p.61) this type of communication is also part of the portfolio for communication (on infrastructure projects).

Ultimately, all communication channels are justified in their own way. Above all, it is important to use a good mix in order to reach the broadest possible spectrum and the most diverse target groups. It is important to use both modern, i.e. digital, and traditional, i.e. analogy, channels. At least that is how Borch et al. (2020, p.2) and Brettschneider (2014 , p.61) describe it, advising the use of a wide range of channels and platforms. The mix of channels and platforms includes traditional press work, flyers, a website, social media, emails and information events. Four of the cooperative representatives surveyed stated that they use a mix of all channels, while others could not quite decide which channel is most effective for them. The press is valued by the interviewees for its wide reach and as the channel with which they can reach a large part of their rather older target group. Social media is valued for its ease of use, but is not necessarily used as an information channel by the core target group. There is a broad consensus among those who have made a statement in this regard that face-to-face conversations are particularly effective. Also for Brettschneider (2014 , p.61), direct conversation with all stakeholders - residents, initiatives, employees, politicians and administration, journalists - is irreplaceable. Borch et al. (2020, p.2) also see direct exchange as part of comprehensive communication.

Target group-oriented communication plays a rather subordinate role for some cooperatives, while others make targeted use of different channels. Social media in particular is seen as suitable for addressing young people. This is in line with research that recommends using social media in a targeted manner, especially in urban environments, while it can be less effective in rural areas (Lautermann et al., 2016, p.116). A more casual approach can also be used on social media. IP 8 emphasizes that the attitude of the target group towards wind power - whether supporters or opponents - influences communication. It also emphasizes that targeted communication requires a combination of traditional mass media and digital formats in order to enable participation and dialogue (Borch et al., 2020, p.2). A distinction is also made, at least in IP 11, between addressing the press and communicating with citizens.

6.2. Effective communication: early, emotional and transparent

The findings from the expert interviews on the intensity of communication, the messages and narratives used, the aim of the communication, the emotional appeal, the timing of the start of the communication, the transparency of the communication and the question of the importance of communication for increasing acceptance are particularly relevant to the question of how the cooperatives' communication can increase the acceptance of wind energy projects.

The intensity of communication plays an important role in increasing the acceptance of wind turbines. Theurl & Kleene (2018; cited in Holstenkamp, 2018, p.255) urge that members be kept constantly up to date on projects, strategy and portfolio. For communication on the implementation of large infrastructure projects, Brettschneider (2013 , p.322 ff.) and Kalka & Schlabbers (2014 , p.30) advise permanent communication. This approach can also be applied to communication on wind power projects. The surveys show that some cooperatives have also recognized this and engage in regular and extensive communication. However, other representatives state that they only communicate on an ad hoc basis. IP 10 makes a decisive statement that corresponds to the recommendations from the literature by stating that they communicate constantly in every project phase and beyond. Nothing is known in the literature about wind power communication beyond projects, as it is more about project communication. The representatives of the cooperatives also provide little concrete information on what constant wind power communication looks like in order to increase acceptance. The majority of communication tends to be project-oriented and not of a general nature. Whether the acceptance of wind power can also be increased independently of the project through permanent communication measures remains unanswered.

The core messages that the experts surveyed use for communication are citizen participation, strengthening the business location and regional value creation, climate protection, benefits for the local communities, local energy production and the cooperative community with democratic participation. It can be seen that there are three aspects to communicating these messages. As expected, the most important is citizen participation. The cooperative community with democratic participation also fits in well with this. Climate protection and economic factors share second place. The triad of messages is therefore: good for people's participation, good for the regional economy and good for the climate. The messages about strengthening the business location and regional value creation are particularly well suited to reaching conservative people, as Campbell & Kay (2014) and Feygina et

al. (2010; cited from Winter et al., 2024, p.9) suggest exactly that: Reconciling climate protection measures with conservative values or emphasizing results of climate protection measures that are attractive to supporters of the market economy. The benefits for the project, i.e. the advantages for people through (financial) citizen participation, as well as the advantages for the regional economy and the municipalities, are the focus of communication for the respondents. Brettschneider (2011) also recommends emphasizing the benefits. By communicating these core messages, the cooperatives also highlight the economic prospects for the region and the people (Iyengar, 2005; Schmidt, 2009; cited from Richards et al., 2013, p.427). IP 9 sees it as necessary to explain the higher goals to people, i.e. why wind energy is needed. The challenge that arises from the messages is how to make these messages of benefit so strong for people that they can overlook the negative aspects of landscape disruption and other criticisms and put them behind the benefits. In theory, Segreto et al. (2020 , p.17) also see local social acceptance increasing if the benefits outweigh the costs, through falling electricity prices for local residents, the development of leisure infrastructure and an improvement in environmental quality. If wind power is perceived as an effective, affordable and useful source of energy, local acceptance will be higher (Hoen et al., 2019; Liebe & Dobers, 2019; cited in Hübner et al., 2023, p.2). These aspects are largely taken into account by the cooperatives and must be at the heart of the communicative message. Hübner et al. (2023, p.7) also see the economic impact and the impact on local residents as an important factor for the local acceptance of WTGs. The messages must be formulated in such a way that they emerge in a discussion as the best justification for a competing position on an issue. Such frames appear more convincing to opinion leaders and listeners than alternative arguments. It is important to link an issue - such as wind power - to a positive association or value that has a strong popular appeal (Chong & Druckman, 2007, p.116). This also shows the importance of formulating the benefits in communication, which is already being implemented by most of the cooperatives.

The few narratives identified from the expert interviews are the link between the benefits of a wind turbine on one's own doorstep, the social consensus on the energy transition, the positive approach to communication a la "the glass is half full and not half empty" and the opportunity for people to be part of something bigger. No approaches can be found in the literature for either wind power communication or the communication of infrastructure projects, which is why it is difficult to categorize the results. Orienting and coherent narratives on the energy transition, or in this case on wind power

itself, as Borner (2019, p.353) points out, are missing in the information provided by the cooperative representatives. Certain narrative patterns cannot be identified. It also remains unclear what functions the narratives used have and how they can influence the understanding and acceptance of wind power.

The objective in wind power communication plays a central role in strategic communication. Most of the cooperative representatives surveyed stated that increasing acceptance is the goal of their communication. This long-term goal is accompanied by a further goal, namely the establishment and achievement of citizen participation. Ultimately, these goals are primarily necessary in order to ultimately have the necessary prerequisites to be able to construct plants and overcome all social hurdles. IP 12 describes it quite aptly by saying that communication should aim to cause as little clean-up work as possible. This coincides with the findings from acceptance communication, according to which communication measures aim to increase the cooperatives' acceptance of their project and legitimize it through communication (Becker et al., 2016; Bentele, 1995; Bentele et al., 2015; Brettschneider, 2014; Mast & Stehle, 2016; cited in Walter, 2023, p.35). Communication is therefore central (Becker et al., 2016; Bentele, 1995; Bentele et al., 2015; Brettschneider, 2014; Mast & Stehle, 2016; cited in Walter, 2023, p.35) or a prerequisite (Mast & Stehle, 2016, cited in Walter, 2023, p.35) for the goal of achieving acceptance. The cooperative representatives also understood this to some extent. The indirect goal that resonates and is also cited is the general expansion of renewables in Germany. The communication goals set are therefore quite realistic and necessary, but not so easy to achieve, as Grunwald et al. (2018) and Krebber (2015; cited from Walter, 2023, p.36) make it clear that communication alone is not enough to create acceptance and can only contribute to development of acceptance. The effectiveness of communication in influencing acceptance is therefore limited (Grunwald et al., 2018, p.841), although it is of course the ultimate goal.

The cooperative representatives also see the clarification of myths and false claims about wind power as a partial goal of their communication. Benegal & Scruggs (2024), Gupta et al. (2023) Liebe & Dobers (2019) Winter et al. (2022) (cited in McKenna et al., 2025, p.9) consider education through information and explanations to be important in order to increase acceptance of wind turbines. By implementing information in their communication, the cooperative representatives take this into account and can thus contribute to increasing acceptance.

As emotions certainly play a role in increasing the acceptance of wind turbines , they should also play a role in communication (Hübner, 2020, p.54 ff.). Brettschneider (2014, p.61) also considers emotional appeal to be important for comprehensive communication. However, according to the interviews, the use of emotional elements is only partially considered important. IP 4 has recognized this need to communicate about wind power not only rationally, but also to incorporate emotional aspects, as Hübner (2020, p.69 f.) also suggests, because she sees factual information as insufficient to evoke positive emotions and thus increase acceptance. Some interviewees believe that the emotionality arises solely from the arguments of wind power opponents, which also coincides with the findings of Hübner et al. (2019, p.20), who say that it is precisely the negative emotions that motivate people to become active. The opponents' communication is correspondingly emotional. Four of the interviewees do not find emotional communication appropriate, thus blocking the opportunities and possibilities that arise from it and leaving this field to the opponents or not exploiting the full potential of communication. According to Hübner (2020, ibid.) and Brettschneider (2014, ibid.), successful communication would therefore include both rational and emotional aspects, which some cooperatives are currently still distancing themselves from. The framing theory deals with this topic and states that opponents of wind power often have more tangible arguments that are closer to people's reality, while positive associations tend to be more abstract. Therefore, opponents of wind power often have an easier time (Cousse et al., 2020; cited in Karakislak & Schneider, 2023, p.3). Accordingly, communicative messages must be closer to people's reality, for example through emotional elements. This is because how something is framed affects the attitudes and behaviors of the addressees (Chong & Druckman, 2007, p.109).

There is a broad consensus in the literature that the time at which a cooperative starts communicating has a significant influence on the acceptance of wind energy projects or infrastructure projects (see Brettschneider, 2013; Kalka & Schlabbers, 2014; Karakislak & Schneider, 2023; Maleki-Dizaji et al., 2020). Early entry is important so that people feel involved and that they have the feeling of being involved and able to act (Karakislak & Schneider, 2023, p.8). For wind projects in particular and infrastructure projects in general, Maleki-Dizaji et al. (2020) and Brettschneider (2013 , p.326 f.) see an early start at the beginning of the project planning process as necessary, as there is not yet a large counter-movement, e.g. through citizens' initiatives (Brettschneider, 2013, p.326 f.). Early dialogue is also emphasized in the area of acceptance communication (Brettschneider, 2014; cited from Walter,

2023, p.38). The VDI also refers to this in its guideline. There, the 3rd basic rule is: Involve citizens at an early stage. A large majority of respondents take this into account. Almost all cooperative representatives state that they get involved in communication at an early stage. However, early is a flexible term and is defined differently by the experts surveyed. However, most agree with the recommendation of Maleki-Dizaji et al. (2020, p.13) and (Brettschneider, 2013, p.326 f.) to become active at the beginning of the planning process. Some of the experts surveyed are also unsure whether it is possible to communicate too early or when not everything has been finalized or the project is not yet "in the bag". This uncertainty is also referred to in the literature. Hübner et al. (2019, p. 13), Karakislak & Schneider (2023, p.9) and Maleki-Dizaji et al. (2020, p.12) note in this context that many parameters are often unclear at the beginning of a project and information is therefore withheld. Communicators must then be careful not to give citizens the impression that information is being withheld. As a solution to this dilemma, they recommend telling people when they can expect to receive which information. In any case, it is important to take matters into your own hands before the wind power opponents do. If communication has been neglected and vehement protests from the public break out, there is not much that can be done with communication (Brettschneider, 2013, p.322) . IP 9 also comes to this conclusion, while IP 12 does not see the reins in their own hands.

Transparency is not only emphasized in the literature; the majority of cooperative representatives also see the greatest possible transparency and openness in communication as important in order to increase the acceptance of wind energy projects. Karakislak & Schneider (2023, p.9) and Maleki-Dizaji et al. (2020, p.12) consider transparency in the flow of information throughout the entire planning process of a wind project to be particularly important. The interviewees did not provide any information on how transparent the cooperatives' communication is right from the start. For (Maleki-Dizaji et al., 2020, p.12), transparency in wind power communication means communicating all impacts, costs and benefits. Brettschneider (2013 , p.326 f.) also considers this to be important for the communication of infrastructure projects. However, some cooperative representatives also make a distinction between the various stakeholders and demonstrate a different level of transparency in each case. Other experts interviewed also see limits to transparency when it comes to confidential information. There are therefore very different understandings of transparency and where it begins and ends. Four of the interviewees see it as unavoidable to communicate transparently in order to avoid putting obstacles in

their own way, which puts them in line with Maleki-Dizaji et al. (2020, p.13), who found that a lack of transparency creates new obstacles (for project developers).

Looking at these core aspects of the communication strategy, it can be stated that communication is considered very important, both by the cooperative representatives surveyed and in the literature (e.g. Becker et al., 2016; Bentele, 1995; Bentele et al, 2015; Brettschneider, 2011, 2013, 2014; Hübner, 2020; Kalka & Schlabbers, 2014; Mast & Stehle, 2016; Theurl & Kleene, 2018), which highlights the various aspects, from transparency to timing, emotionality, intensity, narratives and messages. This importance is not only seen in the area of wind power communication, but also in communication on large infrastructure projects and acceptance communication. Both IP 1 and Winter et al. (2024, p.9) consider communication to be important for the large and undecided majority of people, whom IP 1 describes as the indifferent. Ultimately, some cooperative representatives have completely internalized the importance of increasing acceptance and, like IP 15, see it as the "be-all and end-all" or, like IP 5, as a "decisive means". Mast and Stehle (2016; quoted from Walter, 2023, p.35) also see communication as a prerequisite for the acceptance necessary for the success of the projects. Becker et al. (2016), Bentele (1995) Bentele et al. (2015), Brettschneider (2014) Mast & Stehle (2016) and Walter (2023), among others, see communication as the central influencing and success factor for generating or increasing acceptance, as does interviewee IP 9, who does not assume that it is the only decisive factor, but is nevertheless extremely important. Those who state that communication does not play a major role are in any case proven wrong by the findings from the literature.

6.3. Differentiation from fossils, public participation and visual presentation

There are no findings in the scientific literature on whether it makes sense to compare renewables and energy generated from fossil fuels in communication or to compare renewables with each other. In any case, the surveys show that the renewables should not be played off against each other, especially wind vs. ground-mounted photovoltaics. As an example, wind power has an enormous advantage over ground-mounted PV - significantly more electricity can be produced by wind power on the same (sealed) area but the majority of respondents stated that both generation technologies are needed to secure the supply. Some of the cooperatives surveyed see the comparison with energy generated from fossil fuels as an important lever for emphasizing the advantages of renewables in communication.

There is widespread consensus in the literature that citizen participation in renewable energy projects, and in wind power in particular, is extremely important (e.g. Bauwens, 2013; Brummer, 2018; Holstenkamp & Degenhart, 2014; Maleki-Dizaji et al., 2020; Petrova, 2016). Citizens' energy cooperatives are one of the biggest levers here (Müller et al., 2015, p.96). This is also the view of the cooperative representatives surveyed: citizen participation is one of the biggest factors for the success of projects with local people rather than against them. Citizen participation is also an important argument in communication about wind power projects.

The results show that the cooperatives surveyed are in regular dialog with various stakeholders, but rarely seek targeted joint communication with them. The exchange with political actors such as local councillors, mayors or members of the state parliament is primarily bilateral and mostly serves to provide information rather than joint communication. Among other things, one cooperative representative emphasizes the role of mayors as key players in increasing acceptance. This is in line with research that emphasizes the influence of local decision-makers - especially mayors - on the acceptance of wind energy projects (Beermann, 2009; Young & Brans, 2017, cited in Karakislak & Schneider, 2023, p.2). Environmental organizations such as BUND or NABU are also seen as relevant actors by many cooperatives, but there is hardly any cooperation in communication. One exception is IP 4, which considers active cooperation with environmental NGOs to be valuable. This underlines the finding that broad stakeholder involvement can improve project acceptance, even if it involves greater effort (Brettschneider & Müller, 2018; cited in Walter, 2023, p.36). While some cooperatives communicate specifically with project developers, landowners or local associations, direct communication formats with broad participation of individual stakeholders through round tables or project advisory boards remain the exception rather than the rule. For Hübner et al. (2019 , p.40), however, such round tables can be a suitable instrument for communication. Research emphasizes the importance of a well-coordinated dialogue with all relevant groups in order to promote acceptance and effectively place key messages (Brettschneider, 2014, p.61). Although the cooperatives largely address the relevant stakeholders, they tend to do so bilaterally and not as partners for communication. However, closer networking and cooperation in communication could, for example, give communication greater reach.

The expert interviews revealed that visuals play a major role in the communication of wind energy projects. Many cooperatives use images, drone shots or visualizations to make the dimensions of wind

turbines more tangible and to evoke emotional reactions. This is in line with the scientific finding that visualizations help to make abstract messages more understandable and convey content better (Brettschneider, 2014, p.61). Especially in the digital sphere, for example in social media, images are considered indispensable as they increase attention and break up longer text passages. At the same time, some interviewees emphasized that visualizations can have very different effects depending on how they are presented - from factual to manipulative - and should therefore be used deliberately. Opponents of wind power in particular use visualizations deliberately to give people a false impression of the scale of the projects. The technical and financial implementation poses a challenge. Many cooperatives simply lack the budget or equipment to create elaborate visualizations. The question is also raised as to whether realistic visualizations really help to increase acceptance, as wind turbines are simply large. Textual communication also plays an important role for the cooperatives. Some deliberately rely on a combination of images and text, while others focus more on text-based communication, especially in the early project phases. It is emphasized that long texts often receive less attention and that visual supplements are therefore helpful in making content easier to understand. Some interviewees report that they work more with accompanying texts, while others point out that text work is often done spontaneously and without a long-term strategy. Both visual and textual communication are used specifically to create acceptance for wind energy projects. While images and visualizations are primarily used for emotional appeal and to clarify dimensions, text remains essential for conveying detailed information. The greatest challenge lies in professional implementation, as many cooperatives do not have full-time communication staff due to limited resources.

6.4. External influences and professionalization as an obstacle

The communication challenges that citizen energy cooperatives face in general and specifically with regard to wind energy issues have not yet been researched. However, the statements from the expert interviews provide an important insight. The majority of respondents see dealing with opponents of wind power and the work involved in clarifying false claims from this group as the greatest challenge in communication. Taking the wind out of the sails of wind power opponents as early as possible is seen as a possible solution here, which is also emphasized by Brettschneider (2013 , p.326 f.): Early involvement of people in the process creates trust and inhibits the formation of counter-movements. This trust in the main actors is an important factor for local acceptance, as Segreto et al. (2020, p.16)

emphasize. Hübner's IAM also identifies trust in actors and processes as an important factor for the local acceptance of WTGs (Hübner et al., 2023, p.16). The financially powerful fossil fuel lobby is also brought into play by one interviewee, against which the cooperatives, whose financial scope is clearly limited, have a difficult time. Furthermore, the existing conflict between environmental protection and nature conservation on one hand and the erection of wind turbines in forests, on the other is also seen as a challenge for communication. Other challenges include problematic situations in which the cooperatives can find themselves through no fault of their own and, quite clearly for the mostly small full-time teams, limited personnel resources for communication.

The results show that the cooperatives surveyed handle criticism in their communication differently. While some actors prefer a proactive strategy and address critical issues openly, others take a reactive approach by only responding to criticism when it is actually voiced. The proactive and open approach can prevent criticism from getting out of hand in the first place. This approach is reflected in the statements of those experts who believe in communicating critical points openly at an early stage. At the same time, there are voices that see an overly offensive approach to criticism as potentially counterproductive. As the interviews show, there is a risk that an excessive focus on potential criticism will open up new debates that may not have previously played a role in public perception. Another key aspect of the results is the preference for a factual and fact-oriented approach to criticism. The majority of experts emphasized that false claims should be countered with factual argumentation and clarification. However, there is an area of tension here: while fact-based argumentation can be effective in many cases, there is criticism that is not primarily based on facts, but on emotions or ideological convictions. In these cases, a purely factual counter-argument could reach its limits. Another relevant question is the extent to which criticism is seen as a legitimate debate. The majority of respondents are in favour of taking the concerns and fears of the population seriously, especially if they relate to understandable issues such as landscape change or noise pollution. Nevertheless, some communicators draw clear boundaries and see no need to raise every argument - especially if it is perceived as "abstruse" or irrational. Finally, the results show a balancing act between keeping calm and acting according to the situation. While some interviewees emphasize that one should remain calm in communication and not respond to every provocation, others see the need to alternate between defensive and offensive behaviour depending on the situation.

The results show different assessments of communication that went wrong. While the majority of the experts surveyed did not see any serious errors in their communication, others reported misjudgements and challenges. Among other things, an emotional reaction to criticism is seen as problematic, as it makes objective dialog more difficult. At the same time, an overly rational argumentation cannot reach many critics and the communication remains ineffective or does not catch on. One mistake that was mentioned was the misjudgement of local conditions or the strength of the resistance. Inadequate targeting, such as addressing younger people too late, was also cited as a communication error. Another case of miscommunication is reacting too early or too late, which underlines the importance of the right timing.

The results show that only a few cooperatives had major problems with negative reporting by the press. In some cases, the cooperative representatives stated that one problem was that reporting was sometimes one-sided or simply incorrect. In some cases, the experts surveyed are confronted with editors who have a critical attitude towards wind power. The IP 4 cooperative also had to deal with self-inflicted communication errors and reporting on them. The reactions to negative reporting vary. While some actors rely on corrections or counterstatements, others prefer direct dialog with journalists in order to clear up misunderstandings. At the same time, there is a tendency towards calmness in dealing with critical media reports, according to IP 5 Press work must always take different perspectives into account.

Communication is only professionalized to a limited extent. This is reflected in a lack of resources, inadequate technical equipment and a lack of a strategic approach. Most of the cooperatives surveyed have only a few full-time employees. Only four of the respondents have their own employees specifically for communication. In the area of social media and public relations in particular, there is a lack of expertise, financial resources and personnel capacities. Many communication measures are created spontaneously, without long-term planning, which some interviewees reflect on self-critically. At the same time, IP 11, for example, claims to implement communication professionally, but is unable to do so due to limited resources. There is therefore still a lot of room for improvement and great potential to make communication more efficient and effective through targeted professionalization. However, the major challenge here is the limited resources of many cooperatives.

Most of the cooperatives surveyed do not use professional tools to measure the success of their communication. Instead, the assessment is often intuitive or based on how often it is reported in the press or how it is discussed in local council debates. Some see project success as a measure of successful communication, but cannot clearly determine whether this is solely due to communication or possibly other factors. While some actors use increasing membership figures as an indicator of success, for many it remains difficult to measure success or is simply not taken into account. Only one cooperative specifically uses a media monitoring tool to analyse reach and market presence. For the most part, there is no structured measurement of communication success, partly due to the low level of professionalization of the cooperatives and a lack of human and financial resources.

Most cooperatives receive positive feedback on their communication, particularly for its transparency and openness. Recognition is shown through public support for projects, increasing membership figures or successful projects. A lack of opposition is sometimes seen as approval, while systematic feedback is rare. There is only isolated criticism, for example in connection with wind power projects in the forest or misjudgements of local sentiment. Feedback is often provided informally, for example through personal conversations in the local area, which reflects the close links between the cooperatives and the local population. The cooperatives do not receive systematic and comprehensive feedback on communication; it is more a matter of sporadic feedback.

7. Conclusions and Recommendations

7.1. Conclusion

Communication on the topic of wind power and wind power projects varies greatly among the experts surveyed from the citizens' energy cooperatives. They ranged from "We have no communication" to "We have our own team for communication". One reason for this is that the cooperatives have very different starting conditions, ranging from zero full-time employees to 400 employees. The extent to which the majority of respondents communicate on the topic of wind power or their own turbines also varies greatly. While almost all respondents carry out press work and use various forms of direct communication (e.g. information events), the situation is different when it comes to communication in the digital space. Most cooperatives still use email newsletters and the website, whereas social media tends to be neglected. The majority of cooperatives do not communicate as broadly as possible across all channels, nor do they address a broad target group. Furthermore, the majority of cooperatives do

not have a communication strategy, even though almost all of the experts surveyed recognized the importance of communication for increasing acceptance. This is also consistent with the findings from the existing literature. The intensity, constancy and regularity of communication is not given by the majority, but is mostly project-oriented, although the opinion of science is clear: constant communication. The messages and narratives used are relatively similar among the cooperatives. Citizen participation, strengthening the business location and regional value creation as well as climate protection are very important. The goal of communication is predominantly clear: the cooperatives' projects should be implemented with the greatest possible local acceptance. The emotional appeal plays a rather subordinate role, although the literature points out that more emotionality is required. The majority of respondents stated that the time of entry into communication was "early", although they perceived very different times as early. The existing research clearly sets the time of entry as before the start of construction in the planning phase. The transparency shown by the majority of cooperatives is fully in line with what existing research recommends: as early as possible. The greatest challenges for communicators are irrational opponents of wind power, who can only be reached with facts to a limited extent, limited financial and human resources for professional communication and the difficult environment for communication, as wind power represents an intrusion into nature and the everyday lives of local people. In contrast, the interviewees have fewer problems with the press, with which most of them have a good relationship. The existing research and the new findings from the qualitative expert interviews provide a good initial answer as to which communication approaches of energy cooperatives ultimately contribute most to the social acceptance of wind turbines and what the success factors and challenges are. What is needed is a broad spectrum of communication channels and a broad target group approach through early, constant and transparent communication with messages that not only convince people with facts, but also use emotional elements. The message about the (financial) benefits of wind power for local people, municipalities and the local economy is also of central importance. The challenges are also clearly identified, but the success factors and examples of successful communication vary greatly due to the wide range of experiences that the experts surveyed have had. However, it is not possible to determine a recipe for success from the surveys, with which nothing goes wrong in communication and the increase in acceptance is a sure-fire success. In practice, the results can provide important insights and the cooperatives can benefit from the summarized experiences of others as well as the classification in the state of research and the

resulting intersection. A recommendation for action is attempted in the final section (7.4). For theory, the results from the expert interviews are more important as a basis for further research, especially for quantitative approaches that can build on the findings; more on this in the following section (7.3).

7.2. Limitation

The results of the expert interviews provide a first good insight into the communication of citizen energy cooperatives on wind power. The findings show the different approaches and best practices of the cooperatives surveyed. Due to this diversity, patterns in communication can only be identified to a limited extent. While there is a great deal of agreement on some aspects, e.g. in the assessment of the importance of communication for increasing acceptance, but also in particular on the use of certain communication channels or on the topic of transparency in communication, there are also aspects, that have little in common. One example of this is the emotional appeal in communication. As a result, no generalizing statements can be made that are generally valid for energy cooperatives. A total of 42 cooperatives that could be identified as "active in the wind sector" were surveyed for this study. Holstenkamp & Degenhart (2014) identified a total of 74 cooperatives that were active in the wind sector at that time. There is no current literature on how many there are today. Ultimately, 15 cooperatives responded, i.e. only one third of those that are actually active in the wind energy sector. Due to the comparatively small sampling, no statement can be made as to whether sufficient interviews were conducted and whether new insights could be gained through further interviews. It is therefore not possible to say whether 'theoretical saturation', as described by Glaser & Strauss (1967) as part of their influential grounded theory approach in qualitative research, has been achieved. The results have practical relevance and can serve as a good basis for further research. It is necessary to quantify the results in order to apply the qualitatively collected data to a representative group of cooperatives. Another limiting factor is the background of the experts surveyed, some of whom work as board members and others specifically in the area of communication in their cooperative. In addition, some of the interviewees work on a voluntary basis and others on a full-time basis. The answers therefore vary in their level of detail and are also based on different levels of experience.

7.3. Outlook

The analysis of the responses and the summary of the results give rise to some new, further questions and research approaches. The target groups of cooperatives tend to be older men with a high level of

education and a financial cushion. Research could therefore take a more targeted approach to reaching younger people and what role this target group plays when it comes to the acceptance of wind power projects. Specifically, there is also a need for further research into the social media communication of cooperatives. On the one hand, social media already plays an important role and is gaining in importance, but on the other hand, the majority of the cooperative representatives surveyed do not consider it a high priority. Further starting points for research are what exactly early communication means and how far transparency must go in communicating about wind power projects. Nothing is known in the literature and less from the conducted interviews about the degree of professionalization of citizen energy cooperatives in the area of communication, nor about the extent to which the lack of professionalization inhibits the development of the cooperative sector and the growth of individual cooperatives. There is also little current data on the status of citizen energy cooperatives in Germany. There are various figures circulating about how many cooperatives there are in the energy sector. Furthermore, no current data is known about the proportion of cooperatives that are active in the wind power sector. Due to the socially and politically desired and demanded energy transition, the expansion of wind power will continue and will inevitably move closer and closer to the people, as the potential areas further away from inhabited areas will eventually be exhausted. Ultimately, the energy transition will stand or fall with the acceptance of the same and, in particular, with the acceptance of wind power. Citizen participation will therefore play a role that should not be underestimated and about which as much knowledge as possible needs to be gained, which is why research should take a closer look at the cooperatively organized energy transition.

7.4. Recommendation for Action

Some recommendations for action can be derived from the results of the expert interviews and the existing literature. In order to increase the acceptance of wind turbines through communication, energy cooperatives should…:

- **take a close look at the target group and analyse it.**
  - focus on all age groups and address young people as well as those who are already retired.
  - be well informed about the local structures, conditions, mood and situation.
  - identify the people in the town who have influence and, if possible, involve them in communication.

- focus communication primarily on indifferent people who do not yet have a firm opinion for or against wind power. The vehement opponents can hardly be reached with arguments and facts and the supporters usually no longer need to be convinced.
- inform local decision-makers such as the local council, the mayor and the city administration from the outset and involve them in the communication. The mayor's attitude towards a planned project plays a particularly important role: if he is in favour of the project, that is half the battle.

- **use all channels available to them wherever possible.**
  - use all digital channels.
  - use existing mailing lists for information via a newsletter to reach members and interested parties.
  - in order to reach people - especially those who are not informed by a newsletter – publish information on planned, under construction and completed wind energy projects on the website. A separate project website can also be useful.
  - use all available social media channels.
  - use social media channels should in the same way as other channels, i.e. whenever new information is available.
  - use social media should to reach younger target groups and not leave the virtual debate space to wind power opponents.
  - always keep an eye on social media platforms in order to respond promptly to possible criticism and false statements in comments and feedback.
  - also provide information via articles in the local gazettes and official bulletins.
  - have good contacts and a personal connection - especially with the local press. The aim is to ensure that the cooperative is well-regarded by the press.
  - if possible, invite the press to various on-site events (e.g. ground-breaking ceremony or commissioning) to provide exciting insights
  - invite the press to preliminary or background discussions, if appropriate. In this way, initial information can be shared (possibly also confidentially) - so that the press is aware of the progress of a project - and you get a feel for the attitude of the press towards a planned project or wind power in general.

- mind that it is always best to pick up the phone and speak directly to the journalists first rather than only "simply" send out a press release (as a second step).
- do not "bother" the press with trivia, but only with relevant and interesting topics to prevent oversaturation.
- also serve the national press for particularly unusual or interesting projects of national interest.
- attach great importance to direct communication, i.e. face-to-face. Direct conversations with people are one of the most important communication channels for convincing them. Knowing who the contact person is and being able to speak to them directly creates trust.
- hold local public information events (for planned projects).
- not necessarily consider frontal information events or panel discussions to be the method of choice if the situation on the ground is tense and people are emotionally charged. In this case, it may make sense to use concepts such as themed tables, where the focus is on direct personal interaction.
- set up a project advisory board if they want to regularly inform the most important stakeholders in a confidential setting and exchange information with them.
- choose the use of flyers carefully. Under certain conditions, flyers can be useful, for example in very rural structures with sparse populations.

- **mind the way in which is communicated.**
  - communicate as transparently as possible and disclose everything that does not stand in the way of the own process or does not violate confidentiality.
  - in individual cases, keep their feet still, i.e. certain details of project progress (e.g. in the phase in which objections can be submitted), so as not to attract the attention of wind power opponents.
  - start communicating as early as possible, preferably at the beginning of the planning process, before there are any rumblings among the population. This prevents local people from feeling left out.
  - "get in front of the wave". If the discontent is already loud and the wind power opponents are making themselves heard, it is difficult to counter their influence.
  - also use emotional elements in communication to convince people of wind power on a personal level.

- use facts in a well-dosed manner but not as the only elements in communication
- communicate in understandable language at eye level and avoid technical and legal jargon.
- not adopt the tone of the wind power opponents.
- use a good mix of textual and visual elements.
- make greater use of visual elements in communication. Exciting pictures, drone shots, videos and visualizations help people to better imagine the projects and dimensions, serve as eye-catchers and interrupt (longer) texts or loosen them up.
- only use representations or visualizations of the turbines (as a simulation of how they will look later in the landscape) to a limited and well-considered extent, due to the ever-increasing size of the turbines.
- always communicate positively and tell people what can be gained by switching to renewables, in particular, expanding wind power.
- use the advantages and benefits for people, communities and the local and regional economy as the central message of communication.

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Tools

Literature research

In researching the literature for this thesis, the following programs were used: Google Scholar and ChatGPT.

GenAI

In the preparation of this paper, I have used following tools based on generative artificial intelligence (GenAI): ChatGPT

I further declare that

- I have labelled the content taken from the GenAI tools listed above with my details in the table below,
- I have verified that the content generated by the above-mentioned GenAI tool and adapted by me is factually correct,
- I am aware that, as the author of this work, I am responsible for the information and the statements made in it, and
- I am aware that violating the disclosure of the use of generative AI in my work is a deception and leads to an evaluation with an insufficient grade.

I have used the above-mentioned AI systems as indicated below.

Areas of contribution	AI tool used	Description of the manner of use and compliance with good scientific practice (if applicable, please indicate the section of the paper)
Development and conception of the research project	None	-
Identification of literature	ChatGPT	Use to identify suitable literature on cooperatives, citizen energy cooperatives, wind power, acceptance and communication on the topics mentioned.
Synthesizing of literature	ChatGPT	For the paragraph on emotions in communication on renewables in section 2.2.2 Acceptance.
Structuring the text	None	-
Formulation of text	ChatGPT	For the linguistic consolidation in sections 2.1.; 2.1.2; 2.2; 2.2.1.; 2.2.2.; 2.3; 3.5; 3.1; 6.4. and 6.5.
Revision of text	None	-
Creation of visualizations	None	-
Translation	ChatGPT	Translation of individual sections if the translation with DeepL Translate and the own translation was deemed insufficient.

Translation

The following programs were used to translate this work: DeepL Translate and ChatGPT.

Appendix

Interview Request

Sehr geehrte Damen und Herren,

Ich schreibe in den kommenden sechs Monaten meine Masterarbeit auf der Hochschule Neu-Ulm in Zusammenarbeit mit der Teckwerke Bürgerenergie eG zum Thema: „Welche Kommunikationsansätze von Energiegenossenschaften tragen am meisten zur gesellschaftlichen Akzeptanz von Windkraftanlagen bei und was sind die Erfolgsfaktoren und Herausforderungen?“

Durch die gemeinsame Grundlage, die Energiewende in Bürgerhand zu gestalten und ihre Beteiligung an Windenergieanlagen bzw. Windparks bin ich auf Ihre Genossenschaft gekommen und würde mich freuen, wenn Sie mich durch ein Experteninterview unterstützen können.

Für die Beantwortung der Forschungsfrage möchte ich eine Datengrundlage durch qualitative Experteninterviews schaffen und bin auf eine aussagekräftige Datengrundlage angewiesen. Daher würde es mich sehr freuen, wenn Sie mir Einblicke in Ihre Kommunikation zum Thema Windkraft beispielsweise in Pressemitteilungen, auf Social Media, in Newslettern oder Ihrer Webseite im Rahmen eines 30–45-minütigen Experteninterviews mit den verantwortlichen Entscheider:innen (Kommunikationsverantwortliche, Geschäftsführung, etc.) bei Ihnen im Unternehmen geben könnten.

Das Experteninterview kann sowohl bei Ihnen vor Ort als auch über einen Videocall durchgeführt werden. Aufgrund der Distanz wäre ein Videocall sicher sinnvoll. Ihre Informationen und Antworten aus den Interviews werden vertraulich behandelt und anonymisiert.

Wenn Sie sich für ein Experteninterview bereiterklären, bekommen Sie gerne den finalen Fragenkatalog von mir zugesandt. Für den Moment geht es um eine Zusage von und eine Terminabstimmung mit Ihnen, da für die Bearbeitung der Masterarbeit nur ein begrenzter Zeitraum vorgesehen ist. Ich freue mich, wenn ich die verantwortlichen Personen bei Ihnen im Unternehmen, für ein Experteninterview gewinnen kann. Im Anschluss an die Einreichung der Masterarbeit auf meiner Hochschule stelle ich Ihnen gerne die Masterarbeit inklusive Handlungsempfehlung zur Verfügung.

Mit den besten Grüßen

Daniel Wagner

Coding Guide

Category ID	Category Name	Definition	Anchor example	Coding Rule
RQ1-1	Direct Communication	Communication that does not take place by means of a channel but face to face	„Das ist so in der Direkt-vor-Ort-Kommunikation, also sprich Bürgerveranstaltungen machen wir zum Beispiel, wo wir erst mal einladen mit den	All text passages in which the dialogue partner talks about direct communication (face to face) and formats for direct communication (e.g.

			anderen Genossenschaften oder mit der Gemeinde und den Verhinderern.“	public information events).
RQ1-2	Digital Communication	Communication that is played out on a digital channel.	„Sie können sich für einen Newsletter anmelden und dann läuft das ganz klassisch über E-Mail-Kontakt.“	All text passages in which the conversation partner talks about digital communication and the channels of digital communication (e.g. website or e-mail newsletter) are categorised.
RQ1-3	Social media communication	Communication that is played out via social media	„Seit neuestem bespielen wir auch Instagram und Facebook.“	All text passages in which the conversation partner talks about communication on social media are categorised.
RQ1-4	Media Communication	Communication that is played out via conventional media	“Die berühmte Lokalpresse ist an der Stelle ganz, ganz, ganz, ganz wichtig. Und die halten wir ja, wenn es geht, immer auf dem Laufenden, auch durch Hintergrundgespräche.“	All text passages in which the interviewee talks about press work (e.g. press releases, press conferences or press coverage) and about their relationship with the press and journalists are categorised.
RQ1-6	Communication with Authorities	Communication with representatives from authorities	„Was anders ist natürlich die Kommunikation mit der Genehmigungsbehörde im Landratsamt oder sowas. Da geht es um andere Dinge. Da geht es um Gutachten. Da geht’s um Anlagenkonfigurationen etc.”	This category includes all statements in which the interviewees report on their communication with authorities, committees and other official entities.

RQ1-7	Communication Intensity	amount of communication about wind power	„Immer anlassbezogen, das kann mal n Monat können das mal drei Pressemitteilungen sein, das kann auch mal zwei Monate nicht sein.“	All text passages in which the interviewee speaks about the frequency, intensity or extent of communication are categorised.
RQ1-8	Communication Message	what messages are used in communication	„Die Hauptbotschaft ist, Bürger werden Eigentümer und nicht nur Kapitalgeber oder Darlehensgeber.“	This category includes all statements in which the conversation partner reports on the messages conveyed.
RQ1-9	Communication Aim	what the communication is supposed to achieve	„Am Schluss also Akzeptanz erhöhen, klar.“	All text passages in which the conversation partner talks about the goals that are to be achieved with the communication are categorised here.
RQ1-10	Narrative	which narratives are used in the communication	„Das hat glaub ich deshalb so ne große Rolle für Akzeptanz, weil man kann ja immer, das Glas kann ja halb voll oder halb leer sein.“	This category includes all statements in which the conversation partner reports on the are used in the communication.
RQ1-11	Emotional Address	emotional aspects of communication	„Also natürlich ist also jede Marketingstrategie beruht auch auf Emotionen und dass Leute irgendwie von Sachen sich begeistern, weil allein von Fakten kommen sie auch nicht hinterm Schreibtisch hervor, aber schon eher also es ist höchstens mal so am Rande. An sich ist es sehr faktenorientiert.“	All text passages in which the conversation partner talks about emotionality in communication and whether the communication contains emotional or rational elements are categorised here.

RQ1-12	Comparison of Energy Resources	how different energy sources are compared	„Wir spielen insbesondere bei PV und bei Wind die Karte Flächenverbrauch, das muss man ganz deutlich sagen. Wobei wir die Energieträger nicht gegeneinander ausspielen.“	This category includes all statements made by the dialogue partner when comparing renewable energies with each other and with conventional fossil fuels.
RQ1-13	Transparent Communication	extent to which communication reveals anything	„Transparenz ist ganz wichtig.”	All text passages in which the dialogue partner talks about disclosing existing information and the degree and importance of transparency are categorised here.
RQ1-14	Enlightenment	Debunking myths and false claims through communication	„Man versucht diese Mythen oder diese Bedenken, Kritikpunkte, versucht man zu, ja entsprechend zu entkräften, indem man halt sagt, Infraschall da hat sich der Herr Altmaier verrechnet.“	This category includes all statements in which the interview partners talk about educating people about myths and fake news through communication.
RQ1-15	Importance of Citizen Participation	to what extent public participation is important for the acceptance of wind power	„Das ist eigentlich der Weg in die Herzen der Bürger, wenn man das mit dieser substanziellen Bürgerbeteiligung auch verbindet“	It includes all text passages in which the interview partners talk about the importance of public participation for the acceptance of wind power.
RQ1-16	Entry into Communication	when the cooperatives will start communicating about a wind project	“Ja in die Kommunikation steigen wir Jahre vorher ein, also sagen wir 7-8 Jahre schon im Vorfeld, also wo es noch um die Eruierung darum geht, wie viele Windräder werden es überhaupt, welche Standorte sind	This category includes all statements in which the conversation partner speaks about the point in time at which they entered into the conversation and whether it is timely.

			es, mit wem werden wir projektieren.“	
RQ1-17	Communication Challenge	what the challenges in communication are	„Dann diese Koexistenz von Windrädern mit Natur insbesondere mit Wald. Da haben wir ein riesen Thema. Und natürlich driftet es dann immer wieder ab in die großpolitische Diskussion.“	It includes all text passages in which the conversation partner speaks about the difficulties and challenges that exist for the communicators
RQ1-18	Communicative Handling of Criticism	how criticism is dealt with in communication	„Ja wie gesagt Kritik und Bedenken, man versucht natürlich immer ruhig zu bleiben. Man versucht das also abzuarbeiten.“	This category includes all statements by the interlocutor in which the approach to and handling of criticism is discussed.
RQ1-19	Miscommunication	communication gone wrong	„Schiefgelaufen ist halt an manchen Stellen wirklich, dass es einen nicht erwartbaren lokalen Widerstand von einer kleinen Gruppe von Personen gab, in dem ein oder anderen Projekt, die sich massiv gegen Anlagen positioniert haben. Und insofern man das vielleicht unterschätzt hat.“	It categorises all text passages in which the conversation partner discusses mistakes that have already occurred in communication.
RQ1-21	Importance of Communication	importance of communication for increasing acceptance	„Kommunikation ist das Hauptthema glaube ich. Ohne Kommunikation ist es sehr sehr schwierig.“	It is used to categorise all text passages in which the interviewee discusses the importance of communication for increasing acceptance of wind power.
RQ1-22	Communication Performance Measurement	Measurement of whether the	„Tonalität, also wie in der Presse das wiedergegeben wurde,	This category includes all statements in which

		communication was successful	was wir machen, Share of Voice - also welchen Anteil wir im Vergleich zu anderen Anbietern am Markt haben.“	the conversation partner talks about how the success and impact of communication is measured.
RQ1-23	Stakeholder Involvement	to what extent different people and bodies are involved	„Wir führen eigentlich mit allen regelmäßig Gespräche, egal ob LBV, BUND, IHK, wie sie alle heißen. Und wir sprechen auch mit den politischen Parteien. Gemeinsame Kommunikation gibt es selten bis überhaupt nicht.“	This category includes all statements by the dialogue partner in which they talk about how the success and extent of the communication is measured. All text passages in which the dialogue partner addresses the involvement of stakeholders from an official or non-official context in the communication are categorised here.
RQ1-24	Handling Media Criticism	how to deal with media criticism	„Ansonsten versuchen wir eine Gegendarstellung hinzukriegen bzw. die Leute, die uns da über uns negativ berichtet haben, laden wir gerne ein und zeigen dir mal vor Ort, was wir tun. Das hilft dann natürlich.“	This category includes all statements in which the interviewee talks about whether they have already experienced media criticism or negative reporting and, if so, how they dealt with it.
RQ1-25	Effectiveness of Communication Channels	effectiveness of various communication channels	„Diese Frage von welchen Kanälen sind eigentlich die besseren, das ist so punktuell unterschiedlich.“	It includes all text passages in which the interviewee talks about the comparison of the effectiveness of the various

				communication channels.
RQ1-26	Degree of Professionalization	extent to which communication is professionalised	„Wir haben keine Public-Relations-Abteilung in dem Sinne. Also sind da ein bisschen überfordert, das stimmt schon.“	This category includes all statements made by the conversation partner that allow conclusions to be drawn about the professionalism of the cooperative's communication activities.
RQ1-27	Textual Means	use of textual elements in communication	„Alles. Alles geht. Aber textliche Mittel stehen natürlich im Vordergrund.“	All text passages in which the conversation partner talks about the use of textual means are categorised here.
RQ1-28	Visual Means	use of visual elements in communication	“Wenn ich eine virtuelle Geschichte habe, habe ich natürlich den Vorteil, dass ich sehen kann, was da passiert. Ich kann es textlich beschreiben, aber das hilft nicht, sondern wenn es virtuell dargestellt ist.“	All text passages in which the conversation partner talks about the use of visual elements, also in comparison to textual elements, and how useful visual elements are for increasing acceptance, are categorised.
RQ1-29	Communication Feedback	feedback on communication	„Ich hab jetzt eigentlich eher positives Feedback bekommen, dass es gut verständlich ist und dass es transparent ist.“	This category includes all statements by the dialogue partner in which the feedback on communication is mentioned.
RQ1-30	Communication Channels	variety of communication channels	„Bevorzugt würde ich sagen haben wir gar nichts. Da setzen wir auf den gesamten Mix.“	All text passages in which the conversation partner talks about the various used

				communication channels are categorised here.
RQ1-31	Target-group-oriented communication	extent to which the communication is target group-oriented	„Bei Zielgruppen muss man eben immer gucken, welches Instrument man nutzt.“	This category includes all statements by the dialogue partner in which the target group-oriented approach is reported.
RQ1-32	Analog Communication	Communication that is played out over an analogue communication medium	„Das läuft wirklich klassisch dann über Mitteilungsblatt oder auch Flyer, weil sie kleine Kommunen haben kleine Dörfer haben.“	All text passages in which the conversation partner talks about analogue means of communication such as flyers or brochures and similar are classified.
RQ1-33	Non-communication	no communication about wind power	„Über Windkraft als solches haben wir dann nichts in der Kommunikation, weil wir keine Anlagen realisieren.“	This category includes all statements made by the dialogue partners that they have not (yet) communicated about wind power.

Interview Transcripts

The interview transcripts will be submitted separately and confidentially.