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Community Power

Community Wind in North Rhine-Westphalia

Perspectives from State, Federal and Global Level

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WWEA
World Wind Energy Association

LANDESVERBAND ERNEUERBARE ENERGIEN NORDRHEIN-WESTFALEN
LEE NRW

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“COMMUNITY WIND –

POWER OF THE PEOPLE, BY THE PEOPLE,

FOR THE PEOPLE.”

Wolfgang Paulsen channelling Abraham Lincoln at Gettysburg (Gipe 2016)

Cover photos: Wind turbines in the district of Kleve (Germany)/ Participants at the 2nd International Community Wind Symposium 2017, Bonn (Germany)

Abstract

Despite a record number of new installations in recent years, the German wind energy market is in crisis. Recent changes to the federal law (EEG 2017) have initiated a move from feed-in-tariffs to an auction system, while also limiting new capacity to 2.800 MW per year. The introduction of special provisions for community entities, which are aimed at preserving diversity within the sector, put the further development of traditional Community Power entities at risk, along with the very prospect of achieving Germany's climate protection targets.

To help lower market entry barriers, community projects had in 2017 the opportunity to take part in auctions prior to receiving a valid permit, and they have 54 months to realize their project from the time their bid is approved. For other actors participation requires a valid permit, and allows just 30 months for the project realization.

All three auction rounds in 2017 have revealed, however, that large project developers have taken advantage of these specific rules to benefit projects that have nothing in common with traditional notions of community power. In addition, with the support of these specific rules, these project developers were able to include in their price strategy foreseeable technical increases in the efficiency of turbines in the upcoming years, using information on turbine models that are not yet even market ready. This explains why in Germany's first three auction rounds for onshore wind, almost all of the successful applicants made use of the special provisions and qualified as community participants. More traditional community entities have so far lost out, in large part because they are unable to assume the significant risks of auction participation with community member funds, and cannot spread their development risks over several projects. Thus in the competitive auction system they face significant disadvantages.

In addition, the state government of North Rhine-Westphalia (NRW) has created further uncertainties by announcing prohibitive minimum distance rules, and by excluding forests for wind energy development. This not only leads to enormous insecurities within the industry in NRW, but will almost certainly cut down massively on the development of new wind energy facilities, thus threatening a central pillar of the energy transition in one of Europe's biggest energy consuming states.

Furthermore it remains unclear, when and if – due to the lack of valid permits – successful bidders are going to realize their projects. In the 2017 auctions, just 37 out of 198 successful projects held a valid permit. At the same time, several developed and already approved projects are approaching their expiry date. Overall, then, the further expansion of onshore wind energy threatens to decline dramatically in Germany as well as in NRW by mid 2018, once those projects that are being built under the old EEG 2016 rules (feed in tariffs) are completed.

This study offers the results of our examination into Community Wind in NRW. It shows that actors feel the main factor for the identified market insecurity comes from the national level, but also that the state government of NRW has added further challenges to the sector. Moreover, it finds that the definition of Community Wind is inadequate to ensure that a diversity of actors and distributed ownership structures will be able to succeed under the auction system, and it makes recommendations to improve the likelihood that broad community participation in Germany's *Energiewende* can continue into the future.

From WWEA's and LEE NRW's viewpoint, what is needed is a rapid correction of the current auction design and its special provisions for community entities. Therefore the following recommendations to the federal and state level government need to be addressed:

1) The introduction of a de-minimis rule, which would leave a feed-in tariff available for a maximum of three turbines (in accordance with EU commission's requirements) – instead of trying to support community power via privileges based on an insufficient definition. However, provisions should be taken that such rule cannot be misused by splitting projects in smaller units.
2) A clearer legal definition of community energy will still be important should the government seek to give privileges to community power projects. In that case the definition should refer to the four criteria (economic benefits, voting control, majority share, minimum period of ownership) identified and agreed to by experts at the 2nd International Community Wind Symposium 2017
3) Significantly increased auction volume for 2018 to allow the massive number of fully developed and approved projects to get realized and prevent stranded investments
4) Support mechanisms for holistic renewable energy technology approaches including e-mobility, energy efficiency, sector coupling and self-consumption

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List of Abbreviations

BImSchG	Federal Imission Control Act
BMZ	Federal Ministry for Economic Co-operation and Development
BNetzA	Federal Network Agency
CW	Community Wind
EA.NRW	Energy Agency NRW
EEG	German Renewable Energy Act
eG	Energy cooperative
GbR	Private company
GIZ	German Society for International Cooperation
GmbH & Co. KG	Limited Company
LANUV	State Agency for Nature, Environment and Consumer Protection NRW
LEE NRW	State Association for Renewable Energies in NRW
NRW	North Rhine-Westphalia
RET	Renewable Energy Technology
WWEA	World Wind Energy Association

Introduction

On summer days when bright sunshine coincides with strong winds to push renewable power production to a peak, the world's fourth largest industrial nation can already cover its entire electricity demand with renewable power, at least for a few hours. Over the course of a year, one third of Germany's total electricity needs are now provided by renewables. This achievement has been possible thanks to Germany's support system for renewable energies, enshrined in the so-called Renewable Energy Act (EEG). Under the EEG, which has been imitated around the world, any renewable power investor – be it a household installing a solar array on the roof, a cooperative erecting a wind turbine, or a farmer running a biogas installation – could sell their green electricity at a guaranteed price, fixed in advance for 20 years. These so-called 'feed-in tariffs' spurred a huge wave of wind energy projects in Germany by offering an assured income stream. As a result, Germany is now boasting more than 1,5 million renewable power facilities (Amelang 2016). The share of renewables in the country's electricity generation rose from 3.6 percent in 1990 to 32 percent in 2016 (UBA 2017).

However, with the new legal framework of the EEG 2017, this law has undergone the most profound changes since its inception in 2000. With the official objective of steering the sector's growth while keeping costs under control, feed-in tariffs were replaced with an auction system from the beginning of 2017. The government claims that the reforms will help ensure that only the most economically efficient projects will be realised, thus lowering overall costs to procure electricity. They also argue that it is necessary to limit renewable development to allow lagging grid development to keep pace with rising renewable power generation.

At the time of the previous WWEA study (*Headwind and Tailwind for Community Power* (2016)) investors were contemplating the significant impacts of this planned system change. Already many critics foresaw a significant worsening of conditions for community projects in Germany. Accordingly, almost all participants of the study anticipated very negative or negative consequences for community wind. Nonetheless there were some voices which were looking to the future with optimism and seeing further possibilities for community projects.

This present study seeks to provide some clarity, by examining the recent development of Community Wind in Germany and North Rhine-Westphalia (NRW) under the new mechanism of an auction design. Therefore the study addresses the following issue:

What effects does the transition from feed-in tariffs to auctions have on community wind in the state of North Rhine-Westphalia?

This can be broken down to two further questions:

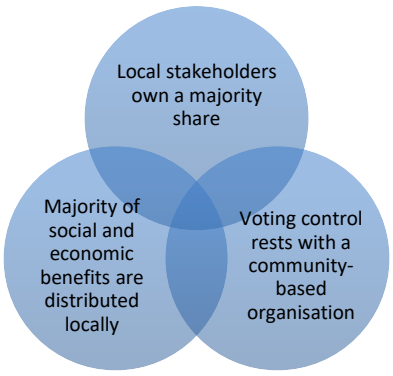
- How have community wind entities and other actors adjusted to auctions?
- What specific needs characterize community wind projects, and what is needed if they are to play a significant role in future energy markets?

The study aims on the one hand to survey the effects of the introduction of auctions on community wind projects, and the other hand to identify framework conditions for a successful participation by community wind entities in the market. The research questions set the foundation for a mixed-methods approach, comprised of expert interviews and an online survey with 37 community wind practitioners from NRW.

The following Section 1 provides an overview on the German Renewable Energy Act 2017. It outlines the framework conditions around the introduction of auctions in Germany in 2017, and describes the most significant policy changes from the former feed-in tariff, as well as the specific simplified qualification requirements for Community Wind projects. Following this background chapter, the study opens with a short analysis of the auction results of 2017, looking at the regional distribution of successful bids as well as specific success factors. Chapter three describes the case study region of North Rhine-Westphalia (NRW) and its characteristics. It highlights the role of municipalities as well as the change in Government in 2017, and gives a brief overview of community wind in NRW. Following these content-related chapters, the study design and methodology are outlined in Chapter 4. The main findings of the interviews and the survey are presented and discussed in Chapter 5. Chapter 6 provides brief summaries of discussions from the panels held at the 2nd International Community Wind symposium in Bonn in November 2017, and closes with a brief outlook at the year 2018. The conclusion includes a discussion of policy recommendations based on the results of the present study.

WWEA's three main elements of Community Power[1]:

1. Local stakeholders own the majority or all of a wind project: A local individual or a group of local stakeholders, whether they are farmers, cooperatives, independent power producers, financial institutions, municipalities, schools, etc., own, immediately or eventually, the majority or all of a project.
2. Voting control rests with a community based organization: A community-based organization made up of local stakeholders has the majority of the voting rights concerning the decisions taken on the project.
3. The majority of social and economic benefits are distributed locally: The major part or all of the social and economic benefits are returned to the local community.



[1] For further information see Schick/Gsänger/Dobertin 2016, 3f.

1. The German Renewable Energy Act (EEG 2017)

1.1. How the EEG 2017 works

On 1 January 2017 the Renewable Energy Act 2017 (Erneuerbare Energien Gesetz 2017; EEG 2017) came into force. The new legal framework is a further development of the original Renewable Energy Act (from 2000), which aimed to increase the proportion of renewable energy sources within German power production, while simultaneously reducing energy costs for consumers. By 2050 the German government aims to have at least 80 per cent of the total electrical power consumed in Germany generated from renewable energy sources, and to reach 55 to 60 percent by 2035.

To achieve these targets and to keep a steady hand on the rise in renewable power over the next decade, a “deployment corridor” was established, specifying how much renewable capacity is to be built each year. For onshore wind installations the annual capacity is set at 2.8 gigawatts (GW) per year in 2017-2019 and at 2.9 GW/year after 2020. However, in order to better align renewables growth with needed grid improvements, the expansion of onshore wind will be limited in the so called ‘grid extension zone’ where transmission capacity for new renewable power has been limited for some time. This concerns the northern German states of Hamburg, Bremen, Mecklenburg-Vorpommern, Schleswig-Holstein and parts of Niedersachsen, where new wind turbines will be limited to 58 percent of the average additions between 2013 and 2015 (Appunn 2016). The amended EEG thus provides an upper limit for the installation of new power generation capacities.

Figure 1: Geographical scope of Germany's 'grid extension zones' (source: Fachagentur Windenergie an Land)

This limit coincides with a fundamental change in the remuneration for Germany's renewable energy production, as the longstanding feed-in tariffs have been replaced by a competitive auction system since the start of 2017. With auctions, payments to renewable generators are no longer fixed by the EEG, but are determined through a competitive bidding process. Each of the renewable technologies (onshore wind, offshore wind, photovoltaics, biomass) has a tailored auction design, with auctions conducted by the Federal Network Agency (Bundesnetzagentur, BNetzA). Only small renewable installations of under 750 kilowatt (kW) capacity (in the case of biomass, under 150 kW) and pilot wind turbines remain outside of the tender system and continue to receive feed-in tariffs (Appunn 2016). Only those projects that received a permit under the Federal Emissions Control Act (BImSchG) prior to 1 January 2017 and which are operating by 1 January 2019 will still receive feed-in tariffs.

In 2017 there were three auction rounds, and from 2018 four rounds will take place per year. Participants are required to place single, sealed bids and to lodge a security deposit to help ensure that only serious bids are submitted. Bids are specific to each BImSchG approval, and therefore cannot be transferred to other projects.

1.2. Auction design for onshore wind installations

Investors participating in these auctions offer a price at which they are prepared to sell electricity from their planned wind turbines. Bids will be accepted, starting with the lowest amount in cents per kWh, until the amount of capacity which is auctioned is surpassed (last successful bid will be awarded to its full capacity). Successful projects will be paid the price of the bid from the time of commissioning for the following 20 years (Amelang 2016). Unlike under the former feed-in tariff regime, only those wind installations that have won a tender will receive contracted payments for the power they supply. The amount of funding corresponds to the bid placed, on a pay-as-bid principle.

In general, a wind project proponent can only take part in an auction if the relevant project received a permit under the BImSchG at least three weeks before the auction date, and is reported in the register of installations. Additionally, investors are required to deposit a bid bond of €30 per kW, due with the bid submission.

To provide stronger incentives for the construction of efficient installations and to ensure geographical distribution[2], a new reference yield (Referenzertrag) has been defined. According to this reference, the bid price is to be calculated based on an assumption of an average wind speed at 100m above the ground of 6.45 m/s. Based on this calculation, operators submit bids once they have been adjusted by a certain quality factor (Gütefaktor) to fit the '100-percent site'. This means that for a project in a low-wind area, the proponent can submit a higher price, but it will be adjusted down for the purpose of the auction, so it can compete with bids from higher-wind

[2] On the benefits of a decentralized energy transition in Germany see: UBA 2013.

sites. The classification of the planned location of the wind turbines shall be carried out on the basis of a wind appraisal and must be submitted with the bid submission. This facilitates the comparison of various bids and allows the BNetzA to decide which bids will be accepted (Allen & Overy LLP 2017). Nevertheless the maximum reference value could not exceed 7 cents per kWh.

Stützwerte für Güte- und Korrekturfaktoren gemäß § 36h Abs. 1 EEG 2017									
Gütefaktor [in %]	70	80	90	100	110	120	130	140	150
Korrekturfaktor	1.29	1.16	1.07	1.00	0.94	0.89	0.85	0.81	0.79

Berechnung: Korrekturfaktor bei individuellem Gütefaktor / anzulegender Wert			
Gütefaktor [in %]	74	←	Eingabe des Gütefaktors am individuellen Standort der Windenergieanlage
Korrekturfaktor	**1.2380**		
Gebotswert [ct/kWh]	5.78	←	Eingabe des Gebotswerts (mit zwei Nachkommastellen) bezogen auf den Referenzstandort (100 %); im Jahr 2017 liegt der Höchstwert bei 7,00 ct/kWh
anzulegender Wert	**7.155640**	**ct/kWh**	Vergütungssatz auf Basis des oben eingegebenen Gütefaktors

Figure 2: Correction Factor in EEG 2017 (source: Fachagentur Windenergie an Land 2017a)

If successful in the bidding process, projects are to be commissioned within 24 months of the public announcement of the successful award. Where the installation occurs after this period, a penalty of €10 per kW remaining uncommissioned becomes due, rising to €20 per kW at the end of the 26th month, and €30 per kW after the end of the 28th month. If the project is not commissioned within 30 months of the notification of the successful award, the award expires (Allen & Overy LLP 2017), although where commissioning is delayed as a result of court procedures the period may be extended further. In the latter case the remuneration period nevertheless begins at the latest 30 months after the notification of the award.

1.3. EEG's definition of 'Community Wind'

The EEG 2017 gives specific simplified qualification requirements for community wind projects. Those include the following conditions:

(1) Permission to participate in the auctioning process without a prior approval under the BImSchG
(2) A bid bond of only € 15 per kW due by bid submission (instead of € 30/kW), with another € 15 per kW once the BImSchG-approval is obtained
(3) Community projects are granted a price equal to the highest awarded bid in that auction (uniform pricing-principle), in contrast to other proponents who (if successful) receive only their own bid price
(4) Community Wind entities have a deadline for commissioning extended by 24 months.

Those simplified qualification requirements apply to projects that meet the following criteria:

(1) A minimum of ten shareholders of the bidding project corporation must be natural persons
(2) Each member's share of voting rights must be less than 10%, and natural entities must hold at least 51% of voting rights
(3) A minimum of 51% of the voting rights must be held by shareholders who live in the district in which the wind farm is to be erected
(4) A commitment to offering the local municipality the right to investment participation of 10 per cent.

An additional requirement is that the project company and all of its shareholders must have not successfully participated in an onshore wind auction within the preceding 12 months (BMWi 2016). Projects have to fulfil all these criteria for at least two years following commissioning.

Provided these prerequisites are fulfilled, community wind entities can submit bids for project with up to six wind turbines and a maximum capacity of 18 MW. If successful in the auction, a community wind project shall be commissioned within 48 months of the public announcement of the award. Where the installation occurs after this period, a penalty of €10 per kW not commissioned becomes due, rising to €20 per kW at the end of the 50th month, and €30 per kW after the end of the 52nd month. If the project is not commissioned within 54 months, the award expires.

2. Analysis of the auction results

2.1. Results of the three auction rounds in 2017

The high number of community wind projects among the successful bids in Germany's first onshore wind energy auctions came as a big surprise. Some 93 percent of all successful bids, comprising 95 percent of the auctions' volume, came from community wind entities (65 bids). According to the Federal Network Agency a total of 70 bids with a volume of 807 megawatts (MW) were accepted.

This first auction was notable not only for the dominance of community entities, but also because the government's plan to lower costs through competition seemed at first glance to be working, as remuneration rates fell well below those prevailing before auctions: the average remuneration stood at 5,71 cents per kilowatt hour (kWh), with the lowest accepted bid at 5,25 ct/kWh. According to the BNetzA, a total of 256 bids were submitted with a volume of 2.137 MW. That means more than two thirds of bids were rejected.

	May 2017	**Aug. 2017**	**Nov. 2017**
Tendered Quantities	800 MW	1.000 MW	1.000 MW
Number of bids	256	281	210
Quantity of bids	2.137 MW	2.927 MW	2.591 MW

Awarded bids	70	67	61
Awarded Quantity	807 MW	1.013 MW	1.000,4 MW
Community Wind (CW) level	95%	96%	99,2%
Highest awarded bid (uniform price for CW)	5,78 ct/kWh	4,29 ct/kWh	3,82 ct/kWh
Average awarded bid	5,71 ct/kWh	4,28 ct/kWh	3,82 ct/kWh
Lowest awarded bid	5,40 ct/kWh	3,5 ct/kWh	2,2 ct/kWh

Table 1: Auction rounds in 2017 in numbers

The second and third auction rounds had similar results to the first, with 90 per cent (second round) and 98 per cent (third round) community wind representation. Notably, the average price of the awarded bids fell considerably further, to 4,29 ct/kWh (second round) and 3,82 ct/kWh (third round).

While it might appear as if the shift from fixed support rates to a 'market-based' price setting has worked well, it has led to a great deal of criticism by the majority of market actors and observers. To understand why, a closer look at the auction results is needed.

First off, we should note that all the large number of winning bids for community wind projects do not yet have permits under the BImSchG; in all three rounds the portion of community wind without BImSchG approval is above 95 per cent. In total just 37 out of 198 successful projects held a valid permit. It is thus not certain that all of these winning projects will actually receive the approval, which they nonetheless need in order to start building. Moreover, it is quite likely that these results will lead to a very low volume of new installations starting in 2019 because 'community wind' from 2017 has 4 years (with punitive tariffs even up to 4,5 years) to be completed. This downturn may not yet be felt fully by next year because of the current backlog of projects under construction, but it may well leave a large gap in the schedule of the deployment corridor.

In addition, press releases from some of these project developers show that they made considerable effort to meet the special rules for community entities as a new business model. Indeed the three auction rounds in 2017 were largely dominated by three project developers: UKA Meißen Projektentwicklung GmbH & Co. KG., Enertrag AG and Prowind GmbH. Just UKA alone was involved in 60 successful 'community wind' bids representing a total volume of more than 1.000 MW. Thus UKA's projects represent more than one third of all successful bids so far (UKA 2017; Weber 2017).

2.3. Distribution of bids

The auction rounds in 2017 were also characterized by a high regional imbalance. Whereas in the first half of 2017 approximately 45 per cent of onshore wind capacity (which still fall under the previous EEG 2016 with its feed-in-tariffs) was installed in southern states, these high consumption regions of Germany have lost out in the auctions held so far. The southern German state of Bavaria, the largest state in Germany (by area), only saw four successful bids, while the third largest state, Baden-Württemberg, did not have a single successful bid.

State	Size in km²	Awarded bids	Volume (MW)	Km²/ awd. bids
Bavaria	70.549,19	4	46	17.637
Lower Saxony	47.618,24	40	561	1.191
Baden-Wuerttemberg	35.751,65	0	0	-
North Rhine-Westphalia	34.083,52	26	368,4	1.311
Brandenburg	29.477,16	52	835,3	567
Mecklenburg Western Pommerania	23.174,17	22	342,8	1.053
Hesse	21.114,72	11	168,2	1.920
Saxony-Anhalt	20.445,26	4	66	5.111
Rheinland-Palatinate	19847,39	5	49,2	3.970
Saxony	18.414,82	3	34	6.138
Thuringia	16172,14	8	133	2.022
Schleswig-Holstein	15763,18	23	215,5	685
Saarland	2.568,65	0	0	-
Germany (total)	357.385,71	198	2.820,4	1.805

Table 2: Distribution of successful bids by state

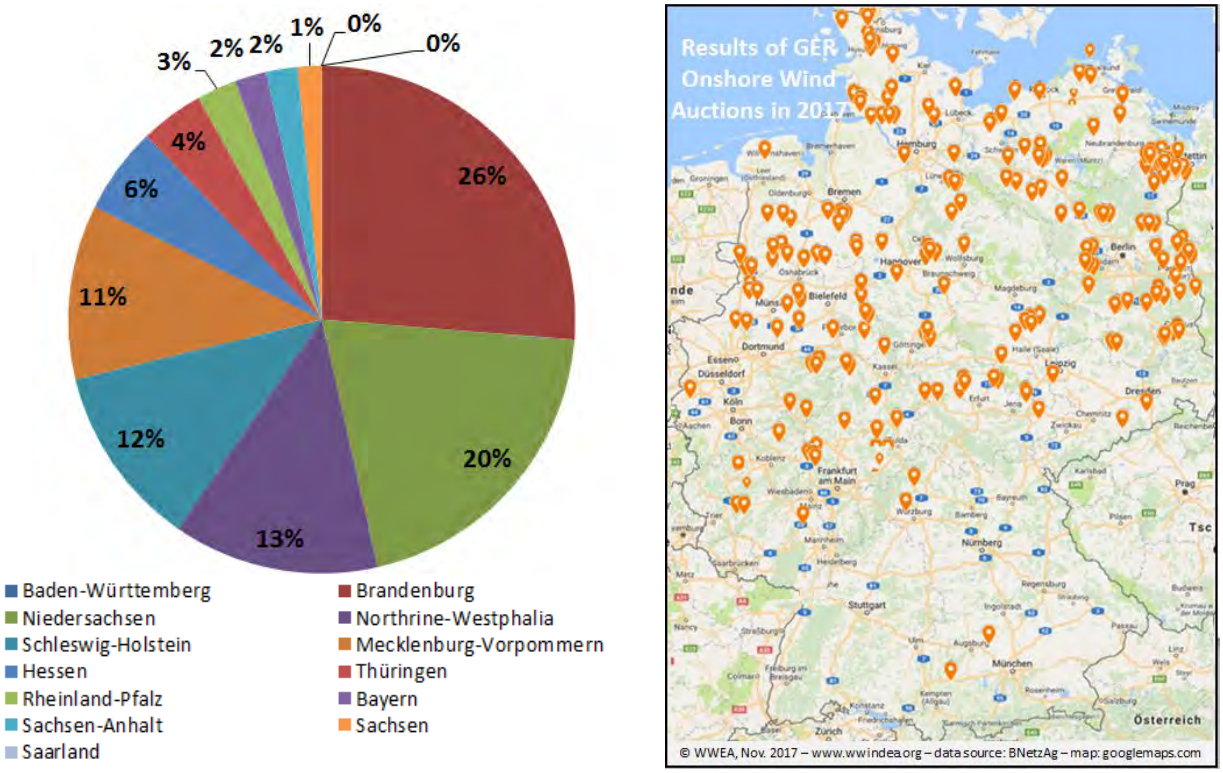


Figure 3: Distribution of successful bids by state

2.4. Distribution of bids within North Rhine-Westphalia

What can be noted for Germany in general can be also transferred to the state of North Rhine-Westphalia. If one takes the geographic centre of North Rhine-Westphalia, which is a district in the city of Dortmund, as a reference point to divide the state into a northern and southern part, one can see that of the nine successful projects in the first auction, eight projects lay in the northern part and only one in the southern part. In the second auction there was no successful bid coming from NRW. In the third auction, with 17 successful bids, 11 are found in the northern part and 6 in the southern part. So to date 18 successful projects have come from the northern part of the state, and only 7 from the southern part of the state.

Looking at the administrative regions (Table 3) we can see that the two most northern regions, Münster and Detmold, have the highest number of successful bids (9), closely followed by Arnsberg with seven successful bids. On the other hand it is conspicuous that among the two biggest regions by population, Düsseldorf and Cologne, we find only 1 successful project.

Administrative region	Population	Size per qm²	Population per qm²	Successful bids
Münster	2.614.229	6.917	378	9
Detmold	2.057.996	6.525	315	9
Arnsberg	3.597.297	8.011	449	7
Cologne	4.422.371	7.364	601	1
Düsseldorf	5.173.623	5.292	978	0
Total	17.865.516	34.110	524	26

Table 3: Distribution of successful bids within NRW

Figure 4: Distribution of successful bids within NRW

2.5. Success factors

To successfully take part in the German auction model, two criteria are key to the success. Firstly, the fact that sites with less than 70 per cent of the reference yield have a considerable disadvantage. On the other hand, the higher the towers and the bigger the rotor and generator of the turbine the greater is the advantage. The results of the previous auctions has shown that the usage of the special rules for community wind ensures the biggest benefits for sites. As community wind projects have 54 months to be built instead of 30 months, and in addition do not need to have a BImSchG-approval, it allows actors to calculate with highly modern turbine models that are not yet on the market. In contrast, investors with a BImSchG-approval have a strong disadvantage as they have to calculate with previous turbine generations and therefore have a price problem (Weber 2017).

Therefore critics argue that wind developers set up a small group of 'stooges' in order to be eligible for privileged terms. As the EEG's definition of 'community wind' only refers to a small number of people and its voting rights, this business model is highly attractive for project developers.

2.6. How project developers calculate their remuneration level

To win an auction is relatively easy, as project developers just have to place a bid close to zero ct/kWh. It is more difficult to determine an economically sustainable bid as the unknown future development of energy prices have to be assessed.

However, as an awarded bid has the call-option for remuneration for 20 years, project developers might allow the prospect of taking losses in the first years to place an even lower bid, says Thorsten Müller, Chairman of the foundation for research on energy and environment law (see Figure 4). The background of this strategy is that, in expectation of continuously rising electricity prices, benefits in a later stage of the remuneration will make up for losses of the first years. And indeed, research institutes expect rising future electricity prices due to the closing down of power stations, in particular nuclear power plants but also older coal power plants. Furthermore, prices for CO_2 certificates are likely to rise. Once market prices for electricity are higher than EEG's remuneration level, it would lead to an abolition of the EEG by the market itself.

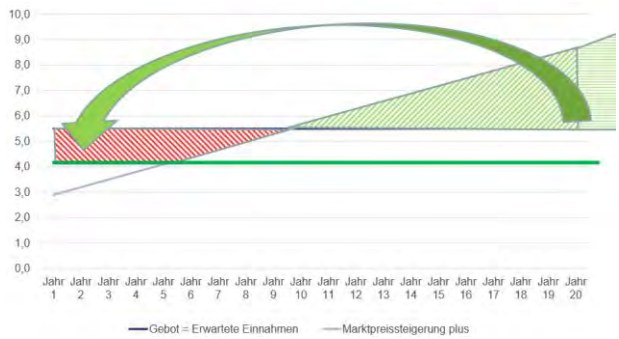


Figure 5: Calculation of remuneration level (source: Stiftung Umweltenergierecht)

2.7. Why projects might not get realized

An awarded bid provides a project developer the right to receive remuneration ('call-option'), but the implementation of projects is not mandatory. If a project is not completed the award winner simply forfeits their bond, and the award is terminated. But successful bids that do not lead to the implementation of generation are a setback for planning around the German energy transition, and provide ammunition to critics of the switch to auction-based pricing. Such development may well happen as the penalty fees are relatively low in comparison to the total costs of projects. Therefore the final construction decision can be cancelled at short notice with a moderate penalty fee. In other words, from the business point of view a successful bid is simply a call-option for the level of penalty fees. If the electricity price is sufficiently high, investors can purchase the call and draw profit. If it is low, they can simply forfeit the penalty fee. It is not certain that the EU will indeed reduce CO2-certificates, which would lead to an increase of the electricity prices. Furthermore future turbine models might not reach the expected outputs (Schlandt 2017). Considering the degree to which these factors make this a speculative market, it is understandable that traditional community wind investors are less successful than more seasoned developers in this gamble for success.

2.8. Discrepancies in auctions' results

A detailed look at the auctions' results reveals several discrepancies, giving on the one hand serious cause for concern, and on the other hand proof of the wild speculations of some project developers.

Shareholders

A look at the trade register of successful community wind projects shows a high number of successful project entities entered into the trade register just shortly before, or in some cases even after the deadline for taking part in the auction rounds has expired. This strongly suggests that many of these newly formed entities were only established to coincide with a particular project.

In addition, critics note that the definition of community falls short in not requiring details about shareholders' financial input into a project. Figure 6 shows a trade register excerpt of one successful community project bid from the first auction. As the graph shows, the financial input of all eleven shareholders is quite small (100 Euro each). If no further financial input follows, it would mean that the bulk of investment is not coming from the shareholders but from external investors. More detailed research shows that the majority of local people in this project are family members of the land owners (marked in red) and that in addition members are made up of the project developer's staff members. Although the trade register excerpt does not show the shares of the project's management, the majority of economic benefits might not stay within the community. Furthermore, analysis of successful projects reveals that many of these companies are not necessarily located in the same district, or even the same state as the project.

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Figure 6: Trade register excerpt of one of the many community wind participants successful in the auction

Turbine sites

Information from the Federal Network Agency reveals some astonishing site calculations by project developers. A review of the indicated areas of successful bids for onshore wind projects reveals that some of the sites are far too small to fit their specified number of wind turbines. In one case a proposed site for three wind turbines would not even offer space for two turbines without a collision of the rotor blades, while another proposed locations that are just five meters wide and would not even give space for a single turbine. Furthermore, we find successful bidders who calculate based on locations where no land use rights have been secured.

However, this bidding with obviously unusable sites has a strategic background: If someone's bid gets awarded, this site cannot be used for another bid in the following 24 or 54 months (community project), in accordance with Article 3.36d EEG. Therefore investors may place their bid not with the originally preferred site but with other sites in the district, so as not to block this site for future auctions. If future awarded bids appear more profitable, or if land use rights are not forthcoming, investors might just pay the penalty fee or sell an awarded bid to a third party within the same district. This clearly shows that some proponents take significant gambles to secure successful bids in auctions.

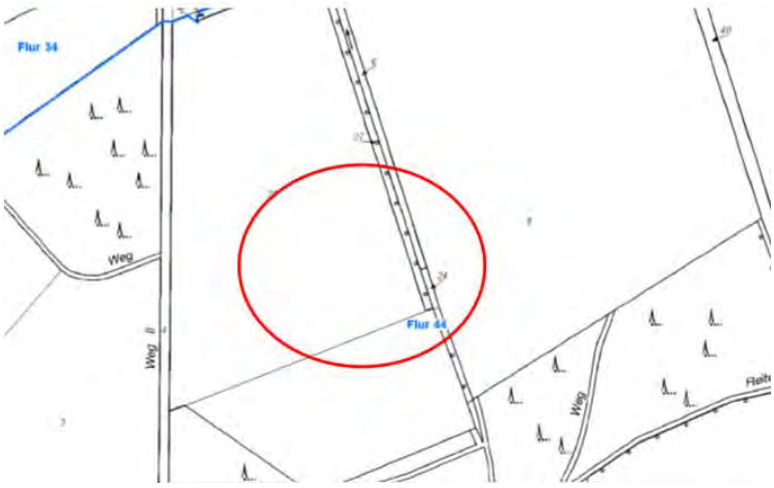


Figure 7: Example of one bidder's proposed turbine location which is only 5 meters wide

3. Community Wind in NRW: Case study and research results

3.1. Deployment of Wind Energy in North Rhine-Westphalia (NRW)

NRW is Germany's most populous state, with a population of 17.5 million, and is also the fourth largest by area (34'083 km²).The largest part of the state is made up of agricultural areas (almost 52 per cent) and forests (25 per cent). In 2013 the state government of NRW enacted the Climate Protection Law with the ambitious aim to reduce its total carbon emissions by 25 per cent by 2020, and by 80 per cent by 2050, against the baseline of 1990. One means to help reach this goal is seen in the deployment of RETs, especially wind energy. The respective target on wind energy deployment is to increase the share of electricity produced from wind power from 4 per cent (5,9 TWh) in 2015 to 15 per cent (20,7 TWh) in 2020. A wind potential study published in 2012 concluded that NRW can produce up to 71 TWh, if less ecologically valuable forests (like coniferous-monocultures) are harnessed for wind power deployment. Most of the locations for wind deployment range between 60 per cent and 90 per cent of the reference revenue (LANUV 2013). With 3'073 wind turbines adding up to an installed capacity of 4'604 MW (as of December 2016), NRW holds fifth rank in wind power capacity across the 16 German states (BWE 2016).

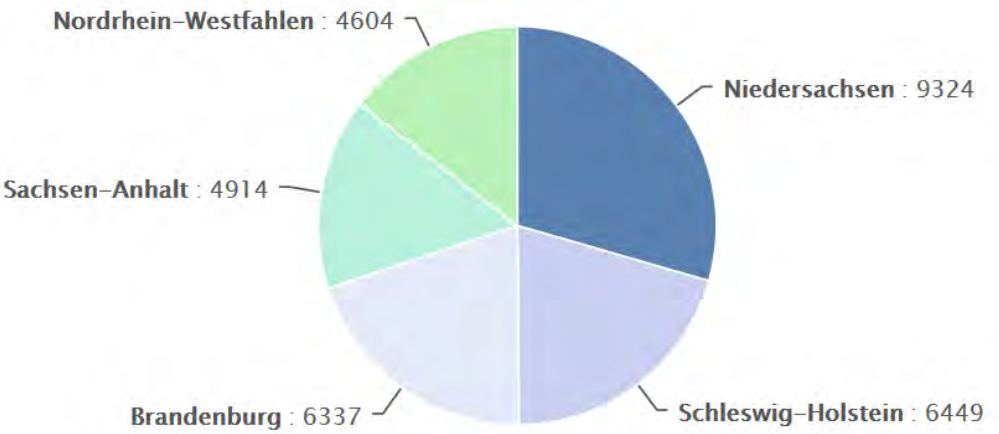


Figure 8: Germany's top 5 states in onshore wind capacity (source: BWE 2016)

3.2. The role of municipalities

Ultimately, the most important authorities in the planning of wind farms are the municipalities, as they are in charge of authorising priority zones for wind energy deployment in their municipal development plans. Only wind projects in those zones can apply for an approval under the BImSchG. Municipalities have to consider the priority zones prescribed in the respective regional plans, but they are also free to assign further priority zones or cancel existing ones as they determine.

3.3. Community Power Projects in NRW

The Energy Agency of NRW (EA.NRW) runs a project database of Community Power in NRW. By the end of 2017, it counted 324 community projects of which 87 are harnessing wind energy. Those numbers are based on voluntary registration by the projects (EA.NRW 2017).

Figure 9: Map of Community Wind Projects in NRW (Source: EA.NRW)

3.4. Change in state government coalition in 2017

After elections in NRW in May 2017, a new coalition between the conservative (CDU) and the liberal party (FDP) replaced the former coalition government of social democrats and the green party, which had been in place since 2010. Under the previous government a boom in extension rates gained momentum. In contrast the new coalition of CDU and FDP has indicated a rather negative attitude towards wind energy in their coalition agreement. Within that 125-page coalition agreement is a legally secured 1,5 kilometre distance rule to mixed or purely residential areas, which is purportedly aimed at maintaining acceptance for wind energy among the population.[3] But some doubt that the NRW-state-government has the legislative power to enforce such a general rule at the state level. Additionally, the agreement also seeks an initiative on the federal level to retract the obligation for municipalities to establish priority wind zones across the state and end to what it calls a 'privilege for wind energy usage in forests' (CDU NRW/ FDP NRW 2017).

The distance regulation follows on the establishment of a similar rule in Bavaria (Germany's largest territorial state) that has brought onshore wind energy there to a near standstill. Critics of the rule fear that a 1.5km requirement could kill off up to 97 per cent all potential new wind projects in the densely populated state.

[3] Today the distance between a wind turbine and the next residential building is based on noise regulations and the proximity to the so-called 'optically besetting impact'.

4. Study Design and Methodology

4.1. Research approach

The present study aims to understand the situation of community wind actors in NRW. The research questions set the foundation for a mixed-methods approach, comprised of an online survey and expert interviews. While the qualitative method of expert interviews allows for guided but open dialogue between the researcher and the expert, the closed-ended online survey primarily aims to allow for a more nuanced quantitative analysis of a broader survey sample. Experts are defined as Community Wind stakeholders, primarily CEOs ("project implementers").

As a first step, a literature review on relevant policy documents and studies about auctions and Community Wind in Germany and NRW was conducted.

Subsequently, the first drafts of the interview guideline and the online questionnaire were designed and pre-tested by the project partners WWEA and LEE NRW, as well as its advisory committee. In total three interview rounds with community wind stakeholders, primarily CEOs, are to be conducted. The first took place after the publication of the results of the first auction (interview period: 15 May – 1 August 2017); the second will take part after the fourth round (interview period: 15 February - 1 May 2018) and the last after the seventh auction (interview period: 15 November 2018 – 31 January 2019).

The analysis of the qualitative interview data is guided by the 'pooling' method of Qualitative Content Analysis adapted from Mayring (2002). After the transcription of the expert interviews, a code catalogue based on the research questions has been derived. After a first scanning of the qualitative data, the deductively established codes were complemented by concepts and codes emerging from the respondents' answers, rather than those given by the researcher. Eventually the resulting code catalogue was used to structure and reduce the complexity of the transcripts and to allow, where possible, a contextualized comparison and interpretation against the results of the online survey.

4.2. Composition of respondents

The WWEA community wind database includes the names and contact details of approximately 60 entities. It includes the database of the EA.NRW as well as the participants of the previous study.

In the course of the first interview round, 37 CEOs of Community Wind farms were queried, 35 through the online survey and thirteen through expert interviews; eleven participated in both methods. In strict statistical terms the sample is too small to enable generalization across the population. With regard to the spatial composition, the overall sample includes respondents from all administrative regions. Against this background it can be assumed that the study has a strong empirical basis. Hence,

the results give a representative overview of the position of Community Wind stakeholders in NRW.

Regarding the legal form of the projects of the online survey participants, we note that the majority (72,4 per cent) of entities are limited companies (GmbH & Co. KG or UG & Co. KG). A great distance behind are energy cooperatives (eG) with 17,24 per cent and private companies (GbR) with 6,9 per cent. However it is not unusual for eG to found a limited company to run a wind project or take part in auctions.

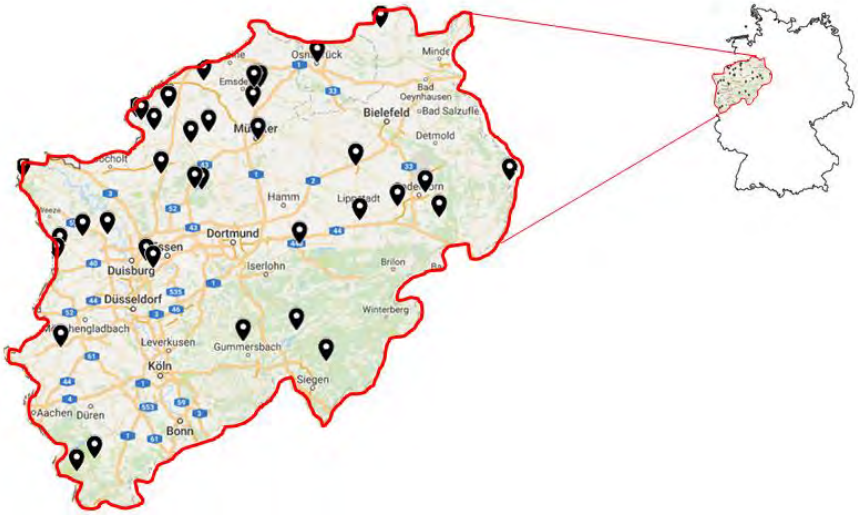


Figure 10: Map of Study's Community Power Participants

5. Findings and discussion

5.1.1. Legal form of projects

If one compares the legal forms of the survey participants' projects with the results of the three auction rounds in 2017, it is surprising that of the 198 successful bids only 1 (0,5%) was in the legal form of an energy cooperative and 7 (3,5%) in the form of a GbR. It would not seem that the auction design itself is the reason for a high changeover to the legal form of a GmbH & Co. KG: respondents' plans regarding the legal form in future auction rounds show similar proportions as the portfolio projects, with 18,75 per cent in favour of energy cooperative (eG), 75 per cent of GmbH & Co. KG/ UG & Co. KG and 6,25 per cent GbR (Figure 11).

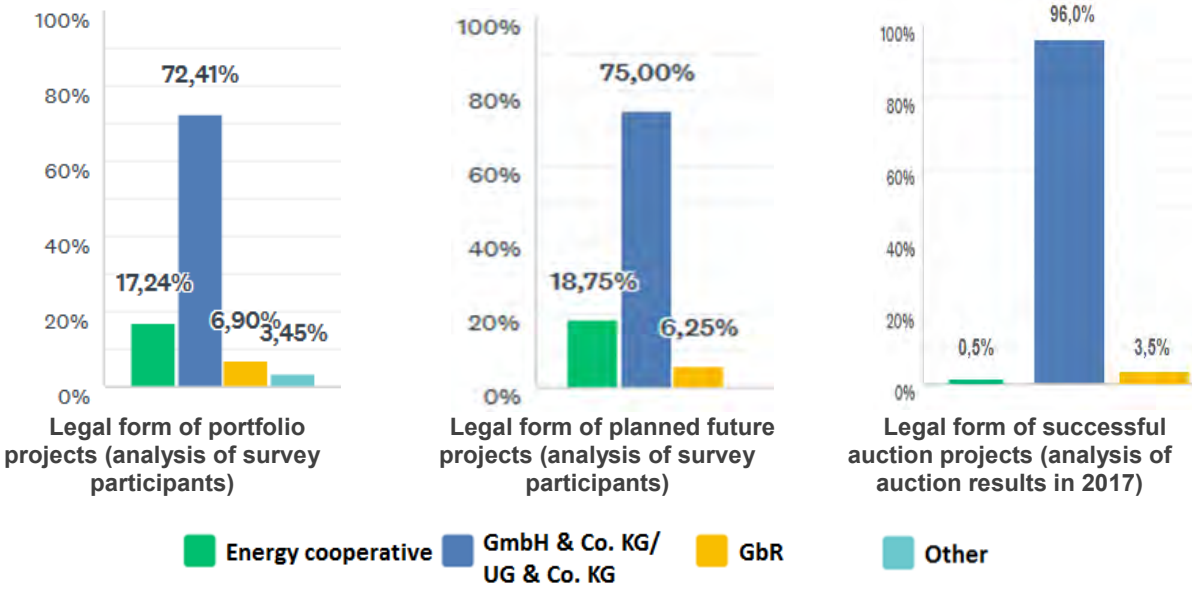


Figure 11: Legal form of onshore wind projects

5.1.2. Participation in Auctions

When asked about the participation in the German auction for onshore wind, almost three quarters of survey participants indicated that they have not taken part in the first auction round. When asked about future participation, only one third of the participants (36,36 per cent) indicated that they plan to take part in future auction rounds. The same share of participants indicated that they won't participate at all. 27,27 per cent were undecided.

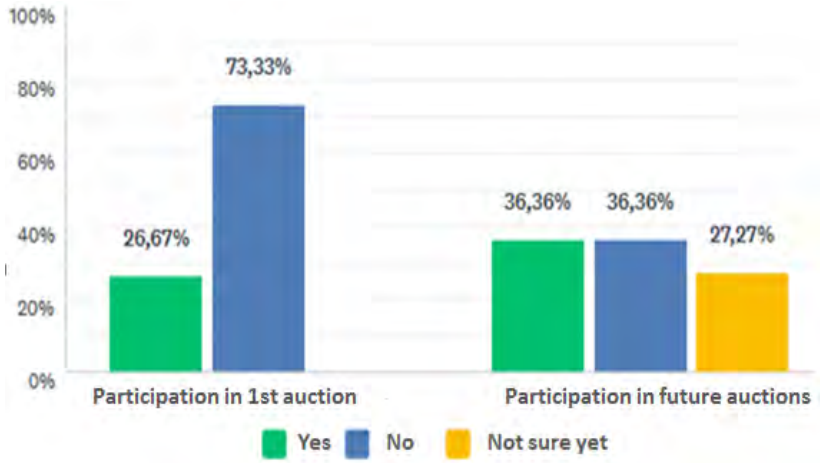


Figure 12: Participation in Onshore Wind Auctions

Respondents' reasons for not implementing further wind projects are diverse, and do not necessarily reflect a direct connection to the switch to auctions. They range from increasing complexity, lack of local drivers, lack of political support from the municipality, and lack of available wind development areas. As reasons for not taking part in the first auction round but in future rounds, it was indicated, that (1) projects with a remuneration from the former EEG (2016) are still being realized, resulting in

reduced internal capacity for moving new projects forward, and (2) participants intended to pursue the BImSchG-approval procedure before taking part in auctions. With the expiry of the EEG 2016 and its feed-in tariffs there had been a massive increase in BImSchG-approvals of projects which still have to be processed in 2017 and 2018 (see Figure 13).

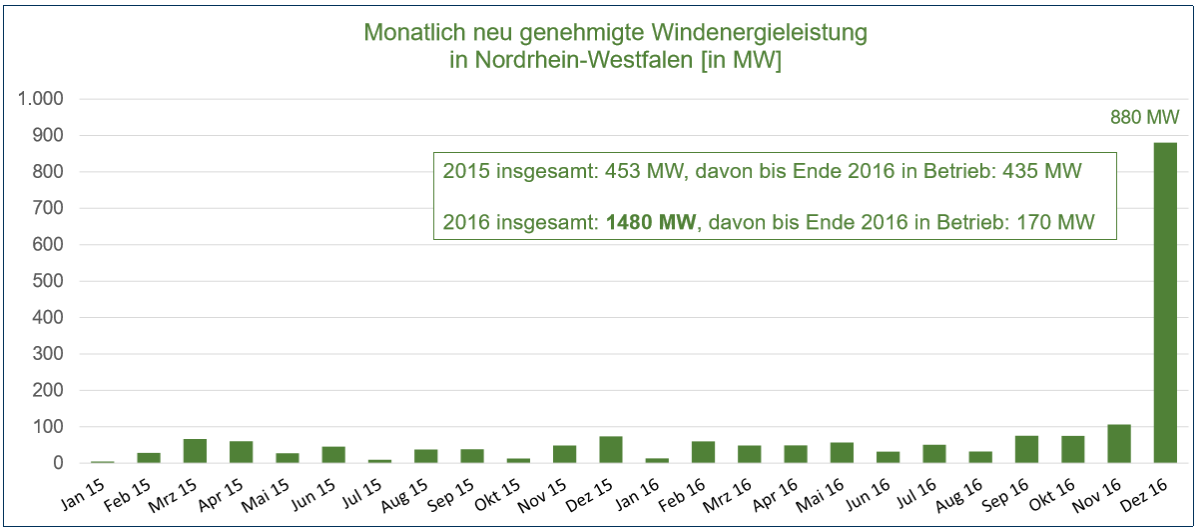


Figure 13: New approved wind energy capacity by month in NRW in 2015/2016 (Source: Fachagentur Windenergie an Land)

5.2.3. Parameters for participating

When asked about the parameters for participating in Germany's first onshore auction, it appears that the results of previous auctions in the offshore and photovoltaic sector, as well as the notification about a limitation of a maximum capacity for northern German areas, play only a minor role in actors' decision making (see Figure 14). Around three quarters of participants indicated that these parameters had no influence on their decision to take part in the auctions. However, many respondents indicated that these did influence their pricing strategy; 19,4 per cent cited the results of pv-auctions, 18,8 per cent offshore auctions, and 14,3 per cent pointed to the limitation of northern German capacity as influential in this regard. In personal interviews, actors noted that on the one hand they were confronted with surprisingly low bids in Germany's offshore and photovoltaic auctions, and anticipated that prices in the onshore auction will also be lower than expected. On the other hand, however, the limitation of capacity in the windy areas of northern Germany strengthened the prospects of success for wind projects in the state of North Rhine-Westphalia.

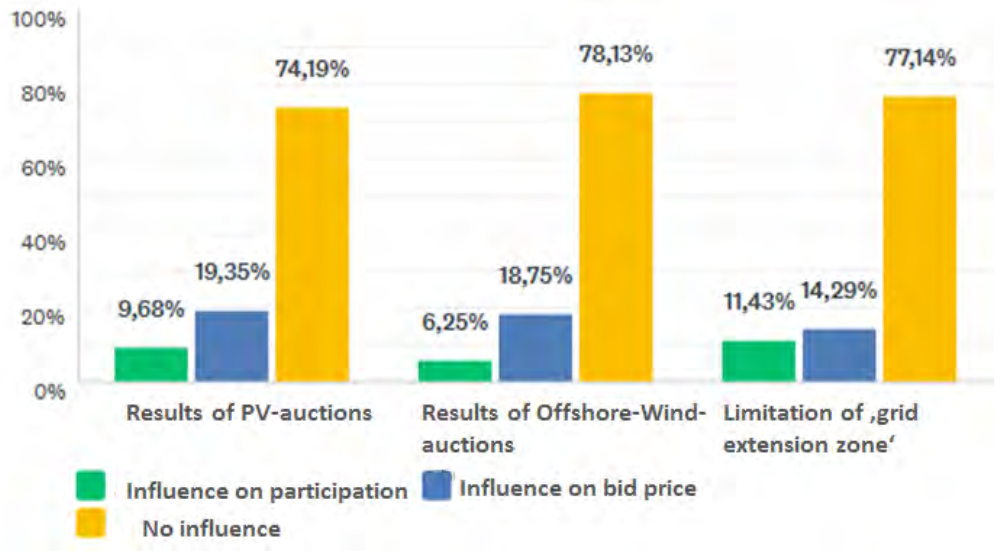


Figure 14: Influence of parameters on auction participation and pricing strategy

When asked if actors had or planned to use the EEG's special provision for community wind entities, the results of the questionnaire do not reflect the results of the successful bids of Germany's onshore auctions. A slight majority of participants indicated they intended to use the special provision (54 per cent) as opposed to not use it (46 per cent). One reason for not using it was the fact that at the time of the survey actors, especially those who had not yet taken part in auctions, did not see an advantage in taking part in auctions without a BImSchG approval, or in having four years to realize the project. Many noted that they were first aiming to gain a BImSchG approval before taking part in an auction.

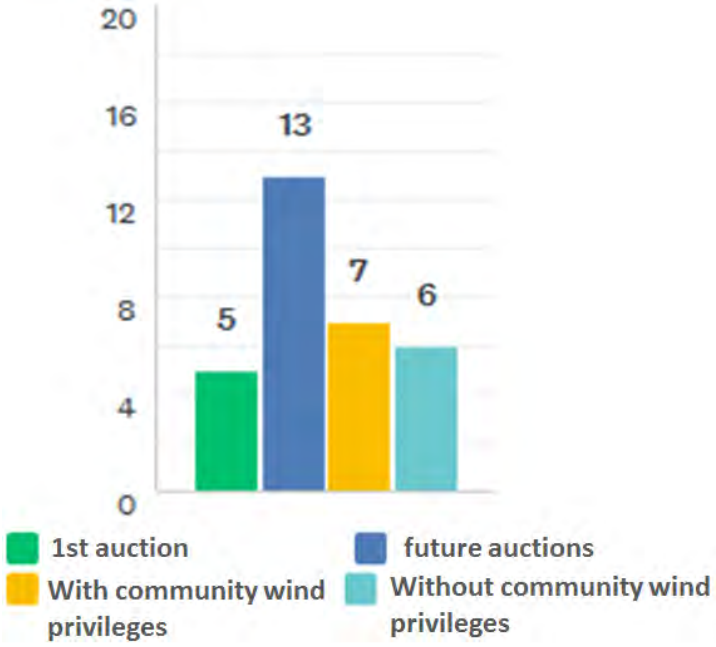


Figure 15: Participation in auctions as "community wind"

5.2.4. EEG's definition 'community wind'

In addition to the above, there are other reasons to not use the special provisions that are related to EEG's definition of 'community wind'. When asked for an assessment of EEG's definition 'community wind' there is no clear trend observable: 42,9 per cent assessed the definition as suitable, 33,4 per cent saw it as too narrow and 25,7 per cent felt it was too broad (Figure 16). In analysing these results it should be kept in mind that three quarters of survey participants had not (yet) participated in an auction, and the survey was conducted before the 2nd and 3rd rounds. As the interviews showed, most actors that had not been involved in the auction to date were not familiar with the auction rules in detail.[4]

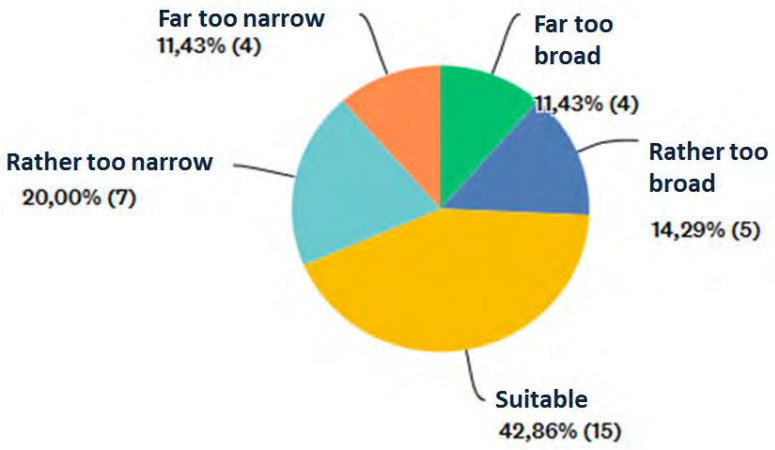


Figure 16: Assessment of EEG's definition 'community wind'

However, the interviews brought up actors comprehensible reasons to judge the definition too narrow on the one hand but too broad on the other hand as well.

5.2.5.1. Where the definition is too narrow

A major concern behind why the definition would be seen as too narrow is the requirement that the project company and all of its members must not have been successfully participating in onshore wind auctions within the past 12 months. As some community wind entities consist of several hundred, and sometimes several thousand people, it is practicably not possible for them to guarantee that this requirement is fulfilled. Nevertheless, actors were very concerned about how to address this issue best.

In addition, to a high extent, actors dislike the requirement to offer a minimum of 51 per cent of the voting shares to shareholders who live in the project district. As the priority areas for wind power are often placed at district borders and with some distance to district municipalities, it is quite likely that municipalities of neighbouring

[4] The definition was later seen as very insufficient, as was clearly underlined at WWEA's Community Wind Symposium in November 2017.

areas are the closest to the project. Nevertheless EEG's definition hinders these municipalities and their citizens from participating in such projects.

5.2.5.2. Where the definition is too broad

According to EEG's definition, community wind entities have to consist of at least ten people, of whom six have to reside in the project district. According to the study participants, this requirement is too easily fulfilled to prevent big project developers from taking advantage of it.

In addition, some criticized the fact that projects only have to fulfil the EEG requirements for a "community project" for two years from the project start. Community actors are worried that after this time companies could completely kick out local residents.

5.2.6. Portfolio projects and EEG's definition of 'community wind'

When asked how far existing projects among the survey participants are in line with EEG's definition of 'community wind', the results surprisingly indicate that most of these projects would not fulfil the full criteria of the definition (see Figure 17). According to the research results, most of the projects do not meet the criterion that no single member holds more than 10 per cent of voting rights (3; 76,47 per cent), and projects with fewer than ten natural persons (1; 41,18 per cent) are common. The highest correspondence was reached with the criteria that at least 51 per cent of voting rights are within people of the turbine's district (2; 70,59 per cent).

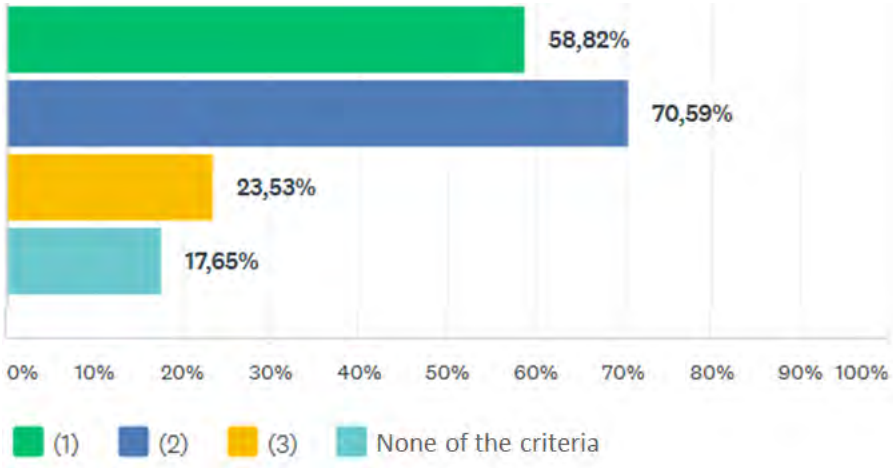


Figure 17: Portfolio projects and EEG's definition of "community wind"

Nevertheless there are voices of practitioners who have been working in the field of community wind for many years who point out that not a single of their projects actually align with EEG's definition (Windbrief Südwestfalen 2017).

5.2.7. Assessment of change to auctions

When asked about the switch from feed-in tariffs to an auction system, the bulk of participants assessed it as negative: 88,6 per cent indicated the changeover as very

or rather negative. Just 8,6 per cent were rather happy about the changeover to auctions. None of the participants assessed it as very positive.

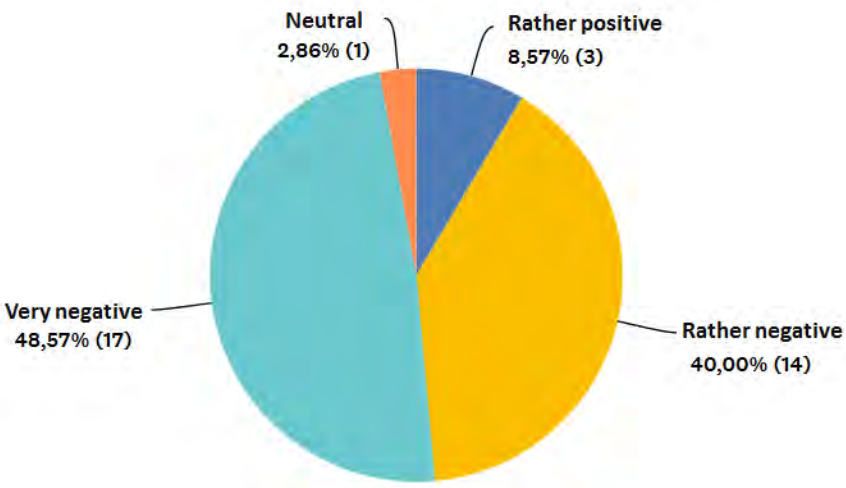


Figure 18: Assessment of the changeover to auctions

5.2.8. Major barriers for community projects

When asked about the auction process, high barriers are seen in the increasing complexity, risk around bid acceptance, in the calculation of return on investment and penalty risks. Some 90 per cent assessed the increasing complexity as negative or very negative, and almost as many the risk of bid acceptance (86,7 per cent) and the calculation of return of investment (83,3 per cent). The risk of penalty costs was assessed a bit better, but with 72,4 per cent still quite negative and everyone saying that this has a negative influence. Those who saw no barrier amounted to only 3,3 per cent for increasing complexity and risk of bid acceptance, and 6,7 per cent for calculation of return of investment.

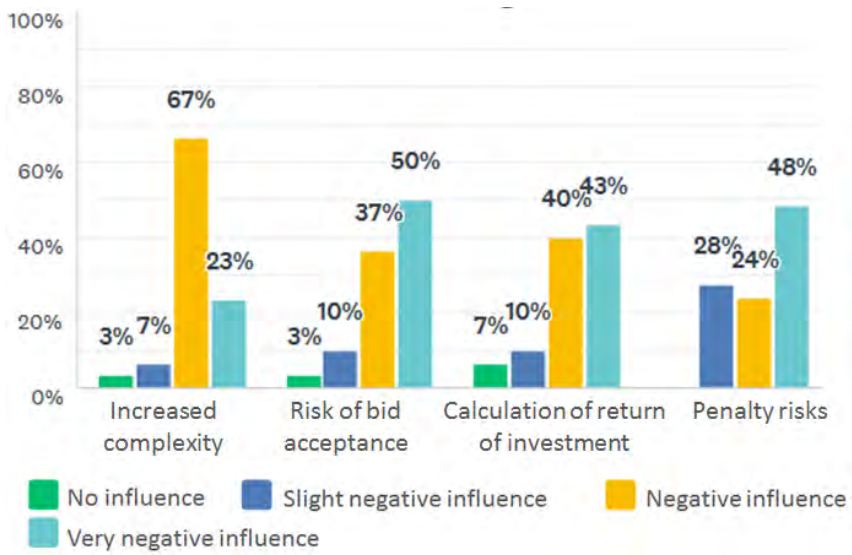


Figure 19: barriers for community projects in auctions

5.2.9. Results of Germany's first onshore wind auction

When asked about the results of Germany's first onshore wind auction, the participants' feedback raises questions: 20 per cent indicated that the results led to more security, and 40 per cent to more insecurity, in dealing with auctions; 40 per cent did not want to specify (Figure 18). It can be assumed that a high number of participants were surprised by the success of community projects but were not sure how to categorize it. On the other hand, there were those who saw the success factors of others and how to successfully take part in auctions: usage of the special provision for community projects and planning with not yet market-ready turbines. The interviews revealed that actors were surprised to realize that other market actors would make use of this strategy.

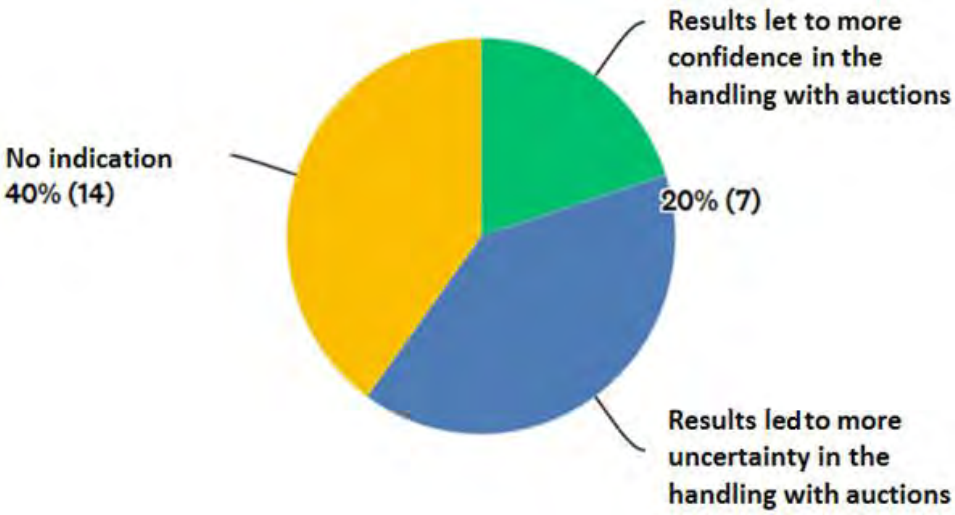


Figure 20: Assessment of the results of the 1st onshore auction round

5.2.10. Type of turbines

When asked for the type of turbine for the project, 9 participants cited the use of the manufacturer Enercon, two of Nordex, two of Vestas and one each of General Electric (GE) and Senvion. The ones who indicated a specific model (12 out of 18 participants) all named marked ready turbine modells. Only one participant noted that his planning was based on using current pre-market models.

6. Summary 2nd International Community Wind Symposium 2017

6.1. Symposium as a prologue in the run-up to COP23

On 3 November 2017, approximately 100 Community Power experts and practitioners from 20 countries on six continents joined in the 2nd International Community Wind Symposium in Bonn, Germany, which was hosted by WWEA and LEE NRW. The date was no coincidence, but was consciously chosen in the run-up to the 23rd UN Climate Change Conference (COP23) held in November 2017 in Bonn, in which approximately 25.000 participants took part. The aim of the COP23 was to further clarify the enabling frameworks of the Paris Agreement – and eventually a GHG-neutral energy supply which is only possible with 100 per cent renewable energies – to make it fully possible for all nations to achieve their climate change goals. In the fight against climate change, renewable energies play a most crucial role. Within this sector, community power should play a central part in climate protection strategies, as it was above all committed citizens who got the energy transition in Germany and beyond off the ground.

6.2. Content and process

Guests were welcomed by Peter Rae (WWEA President) and Jan Dobertin (Association for Renewable Energy NRW). The event was to focus on the current debate around the German renewable energy law (EEG) and on community energy developments in NRW, as well as on exchange ideas on barriers to and prospects for community power in African and worldwide.

09:30 Symposium opening and welcoming speeches
Begrüßung
Chair: Stefan Gsänger, Secretary General, WWEA
Jan Dobertin, Managing Director, LEE NRW
Hon. Peter Rae AO, President, WWEA

10:00 Of Pioneers, Fill-ins and Acceptance-securers - Comments on the Development of Community Wind
Von Pionieren, Lückenfüllern und Akzeptanzbeschaffern - Anmerkungen zur Entwicklung der Bürgerwindenergie
Lars Holstenkamp, Research Associate, Leuphana University of Lüneburg

10:15 Auction's definition "citizen's project" – Curse or blessing for German Community Wind entities?
Sonderregeln Bürgerenergie – Fluch oder Segen?
Fabian Tenk, Community Wind Officer, WWEA

10:40 Coffee Break

11:00 Panel discussion: How practicable is the EEG's definition „citizen's project"?
Panel-Diskussion: Wie praktikabel ist der Bürgerenergiebegriff im EEG?
Chair: Stefan Gsänger, WWEA
Dr. Thomas E. Banning, CEO, Bündnis Bürgerenergie - BBEn
Johannes Busmann, Managing Director, Prowind GmbH
Olaf Fiesel, Head of Division, Ministry of Energy Infrastructure and Digitization of Mecklenburg - Western Pomerania
Wolfgang Kiene, Board Member, Energiegenossenschaft Höxter eG
Werner Soika, Board Member, Bürgerenergie Issum eG

11:45 Panel Discussion: Perspectives for Community Power in NRW and Germany
Panel Diskussion: Perspektiven für Bürgerenergieprojekte
Chair: Julian Schönbeck, Project Manager, EnergieAgentur.NRW
Dr. Thomas E. Banning, CEO, Naturstrom AG/ BBEn
Bjoern Burgey, Consultant, Genossenschaftsverband - Verband der Regionen e.V.
Johannes Lackmann, Managing Director, WestfalenWIND GmbH
Werner Soika, Board Member, Bürgerenergie Issum eG
Heinz Thier, Managing Director, BBWind Projektberatungsgesellschaft mbH

13:00 Lunch break

14:00 Community Power World Trip: Status Quo, Problems, Solutions
Bürgerwind-Weltreise: Stand, Probleme, Lösungen
Chair: Stephanie Weckend, Programme Officer, IRENA
Leire Gorrono, Project Manager, Nordic Folkecenter, Denmark
Dr. Tetsunari Iida, Executive Director, ISEP, Japan
Dr. Christine König, formerly Director, OSEA, Canada
Sergio Oceransky, CEO, Yansa Group, Chile/ Mexico
Hon. Peter Rae AO, President, WWEA, Australia
Dirk Vansintjan, President, RESCOOP, Belgium

15:00 Coffee Break

15:15 Community Power in Africa: Challenges and Opportunities
Bürgerenergie in Afrika: Chancen und Herausforderungen
Dr. Ibrahim Togola, Chairman, Mali Folkecenter

15:30 Community Power within Germany`s Marshall Plan with Africa
Bürgerenergie im Marshall-Plan mit Afrika
Dr. Tania Rödiger-Vorwerk, Head of section, Federal Ministry for Economic Co-operation and Development BMZ

15:45 Panel discussion: Community Power in Africa
Panel-Diskussion: Bürgerenergie in Afrika
Chair: Stefan Mager, Project Manager, German Society for International Cooperation GIZ
Dr. Osman Benchikh, Former Head of UNESCO Energy Programme and Member of UN-Energy
Khalid Benhamou, Managing Director, Sahara Wind, Morocco
Serge A. Etoundi, Managing Director, Sun-Bio-Technology, Cameroon
Farainunache Nkomo, Research Associate, University of Erfurt, Zimbabwe
M. Ousmane Ouattara, Director, Mali Folkecenter, Mali
Dr. Tania Rödiger-Vorwerk, Head of section, Federal Ministry for Economic Co-operation and Development BMZ

16:45 Concluding remarks
Zusammenfassung und Ausblick
Stefan Gsänger, Secretary General, WWEA
Christine Lins, Executive Secretary, REN21

17:00 End of the event

Figure 21: Programme of the 2nd International Community Wind Symposium 2017

6.2.1. Community Power in NRW and Germany

At the outset of the first session, Jan Dobertin (LEE NRW) highlighted the importance of the direct participation of citizens in the energy transition as a key factor for its implementation. In contrast, he criticised the obvious misleading regulations of the EEG 2017 as well as the proposed new barriers for the further development of wind power by the state government of NRW (1500m proximity control, forest ban, etc.). He stated that these proposed regulations have not only already led to massive insecurity within the industry, but they also eliminate around 97 per cent of all potential areas for wind energy in NRW. In contrast, he argued that in order to gain more acceptance within local communities, steady information and education would be needed to overcome common reservations around the energy transition like expected cost burdens and supply uncertainties.

Lars Holstenkamp (Leuphana University of Lüneburg) upheld the previous arguments as well as attempts at defining community energy. According to Holstenkamp, community power is hard to grasp by strict definitions, as it contains heterogeneous entities and business models. Especially important, he indicated, is that financial participation in wind projects is beneficial for its local and social acceptance.

Stefan Gsänger and Fabian Tenk (WWEA) call for rapid corrections of Germany's auction design

Olaf Fiesel from the Ministry of Energy, Infrastructure and Digitalization of the northern German state of Mecklenburg-Western-Pomerania presented a state approach on a definition on community wind, which came into law in 2016 with its "citizens' and municipalities' participation law". According to this law, residents as well as municipalities within a radius of 5km around the turbine(s) must be offered at least 20 per cent of shares in any wind park entity. In addition, a limited liability company is to be established for citizens' and municipalities' protection. It remains to be seen if this approach will be successful in the long run, especially as one major German project developer has filed a lawsuit claiming that this approach is an infringement on entrepreneurial freedom.

Subsequent to the presentation of the NRW-case study's main findings, a panel of NRW-based Community practitioners and an expert from Mecklenburg-Western-Pomerania, chaired by Stefan Gsänger (WWEA), discussed the appropriateness of EEG's definition of 'community wind'. In the beginning, the main findings of WWEA's and LEE NRW's case study were confirmed by the experts; participants agreed that

the present design of the EEG 2017 is not able to preserve the variety of actors nor further the development of community wind projects. Locally founded community wind entities are unable to successfully participate in the auctions, as they are not willing or able to speculate with the capital of their local community and therefore cannot compete in the current price battle. The participants, including the ones of second panel on perspectives for community wind in NRW, chaired by Julian Schönbeck (EA.NRW), criticised that small project developers suffer most – especially those that already invested considerable capital for the BImSchG-approval but are not able to realize their projects under the current auction structure. They therefore came to the conclusion that the EEG design has to be adjusted to guarantee the further realization of community projects with a high degree of local added value (economic, social and ecological benefits) and local participation.

Panellists of the NRW expert discussion on the Symposium 2017

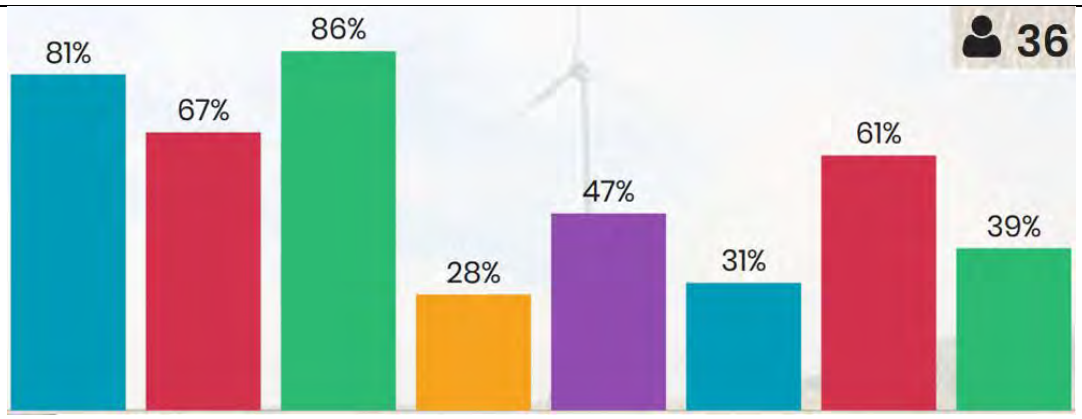
Although all participants were in favour of a de-minimis rule, there was a discussion about whether the current EEG definition of community wind should be adjusted or entirely abolished. Participants in favour of abolishing the definition claimed that it is not possible to define community power, as the landscape of actors is too diverse. They noted that the community motivation is crucial, along with local and financial involvement of initiators in these projects. On the other hand participants argued that the ability of an entity to adapt its business model to defined parameters should not be the deciding factor in recognizing community participation. Participants who were in favour of an adjustment of EEG's definition community wind demanded longer holding periods for projects, abolition of the provision that no single project member be involved in another successful bid in the previous twelve months, binding of citizens to shares and not only voting rights, increasing in the number of persons, and requiring the same regulations for the management companies (Verwaltungs GmbH) as for limited partnerships (KG).

Despite these demands, representatives of various associations recommended practitioners not focus solely on wind energy projects, but be open to new business models, which offer larger margins, for example for projects in the heating, mobility and efficiency sector.

De-minimis rule

The option of a de-minimis rule is embedded in the guidelines of the European Commission, which allow small installations to be exempted from participating in bidding processes. Small installations are defined as those producing less than 6 MW of wind power (or with no more than 6 generation units). In January 2016 the EU Competition Commissioner Margrethe Vesager specified an average generator size to be 2.5 to 3 megawatts, meaning that the largest wind farm that could be built without taking part in auctions would be no larger than 18 MW (Vestager 2016).

At the end of the session, speakers and other symposium participants were asked about their opinion on an appropriate definition of Community Power. A clear majority of participants voted for parameters of social and economic benefits (86%) voting control (81%), a majority ownership share (67%), as well as a fixed maximum number of voting rights per person (61%) in defining Community Power. It should be mentioned that three out of these four parameters are already part of WWEA's definition of community power (see Figure 22).



Legend

- Voting control for community-based organization
- Local stakeholders own a majority share
- Majority of social and economic benefits are distributed locally
- a fixed minimum number of persons
- a geographically defined community
- participation of the municipality
- a fixed maximum number of voting rights p.p.
- a fixed maximum of capital contribution p.p.

Figure 22: Voting for a Community Power definition by Symposium's 2017 participants

6.2.2. Community Power Worldwide

The symposium‘s afternoon sessions widened the perspective on Community Power and Community Wind to the global scale. International experts from Australia, Belgium, Algeria, Cameroon, Canada, Denmark, Japan, Mali, Mexico, Chile, France, Morocco, and Zimbabwe discussed international developments, starting with the challenges as identified in the German case.

Weckend (IRENA) and Rae (WWEA)

Stephanie Weckend (IRENA) chaired the “world-trip” that comprised perspectives on the framework conditions, drivers and barriers for Community Power projects in six countries. It was noted that without the community level involvement in building the energy systems of the future, serious national climate change action will not be possible. Local governments have therefore a unique responsibility to facilitate the energy revolution by providing communities with the frameworks and support in building local sustainable energy infrastructure. The participants identified regulatory/policy barriers as well as financial and cultural barriers. In addition the experts have also found the lack of clarity of the definition to be a problem.

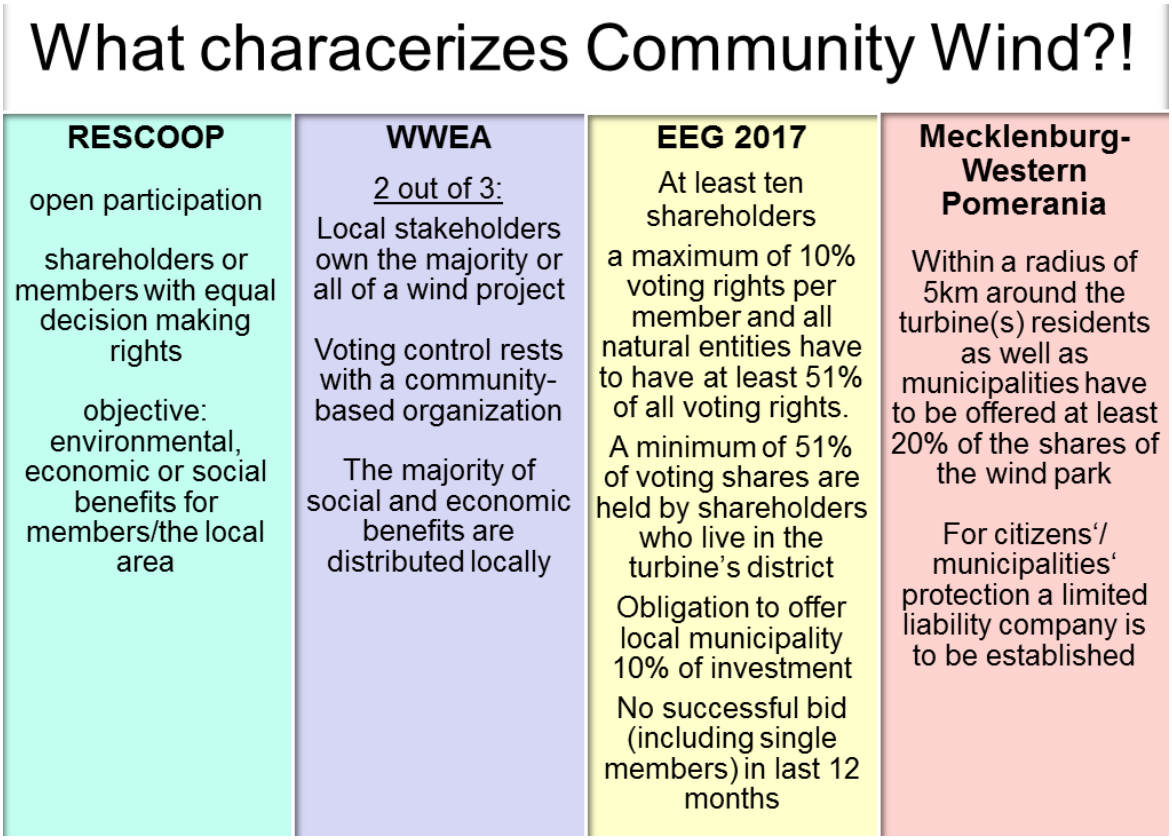


Figure 23: Examples of different approaches to a definition of community energy

6.2.3. Community Power in Africa

The second part of the afternoon focussed on Community Power in Africa. Before Stefan Mager (GIZ) chaired the panel-discussion with practitioners and experts from five African countries, Dr Ibrahim Togola (Mali Folkecenter) and Dr Benjamin Laag (Federal Ministry for Economic Co-operation and Development BMZ) took the podium.

Intense discussions among the participants of the Symposium 2017

Panellists of Symposium's 2017 session 'Community Power in Africa'

In his keynote, Ibrahim Togola gave a brief overview of the status quo of Community Power in Mali as well as the main barriers for the further development of projects. He indicated that today the African energy sector is very favourable for large scale RE projects, both with mini-grids and grid connected. However, considering the demographic situation in Mali and most of West Africa, renewable power with mini-grids has a big role to play. What is now needed is investment capital, policy and transaction structures which allow for both long-term investment and the involvement of local communities. As host of the next World Community Power Conference in 2018 he invited all participants of the symposium to come to Mali in the next year.

Dr Togola's opening was followed by a presentation from Dr Benjamin Laag from the Federal Ministry for Economic Cooperation and Development on creating a decentralised and citizen-oriented energy supply for African rural areas to improve livelihoods. Laag presented elements of his government's community energy strategy for Africa, which are a key part of the newly established "Marshall plan with Africa". He pointed out that decentralized energy solutions can make a fast and effective contribution to energy security in rural areas in Africa. Furthermore they not only promote economic development and generate urgently needed jobs, but also bring new income and regional added value. A decentralized energy supply based on renewable energy would therefore be both an opportunity and a challenge for Africa.

Outlook 2018

The 2017 auction rounds for onshore wind energy were dominated by projects that did not hold planning permission, and so it remains unclear when and if successful bidders are going to realize their projects. The Federal government has thus intervened in an attempt to ensure higher completion rates, by requiring that participating projects in the first two onshore auction rounds in 2018 will need to hold an existing planning permission. How the system will continue after those two rounds, however, remains unclear. If the government does not intervene again, the system in the auction round in August 2018 will revert back to that used in 2017.

However, in November 2017 the BNetzA announced it would set higher maximum prices for auctions next year. The Agency raised the maximum bidding price to 6.3 cents per kWh for the four auctions in 2018, while the limit resulting from the previous auction results in 2017 would have placed it at 5 cents/kWh, due to the fact that auction participants were calculating with not yet market ready wind turbines. "There was a fear that overly low caps in 2018 would result in too few bids to exploit the allowed tender volume," a BnetzA spokesperson said. It remains to be seen whether market actors will make use of the adoption of the new maximum bidding price (BNetzA 2017).

The main concerns are that without significant changes to the new law the market will largely collapse in 2019, and the lack of certainty will further squeeze out smaller players, including many potential community wind proponents. In view of expiring BImSchG-approvals, many approved projects are compelled to try to get an awarded bid so as not to lose planning costs entirely.

However the NRW state ministry of Economic Affairs is planning a federal initiative with the objective to raise the auction’s volume by 1.000 MW in 2018 and to make the BImSchG-obligation a general prerequisite for all future auction rounds.

Conclusion

Community wind, meaning wind farms owned by local citizens, have been the main investment form within the German market for more than two decades. When the Federal government recently initiated the transition from feed-in tariffs to auctions, they admitted that this switch represented a major risk for these investors, and suggested measures to keep a 'diversity of actors' within the onshore wind market by introducing special privileges for community wind projects. However, the current auction design does not fulfil this goal, and actually it seems to satisfy no one. As the auctions' results show clearly, the EEG 2017 has so far failed in securing diversity among proponents and investors. In the first auction rounds, a small number of large developers have dominated the market by making use of the community energy privileges set up in the EEG. Smaller actors like local community groups have hardly succeeded at all.

The core problem with relying on auctions for community projects is the likelihood that a community's bid will be rejected. These actors generally pursue only one project at a time, and cannot spread the time and monetary costs across multiple bids and projects. Among all the auction rounds it turned out to be more than 70 per cent likely that any particular bid would be rejected. Moreover, the EEG's definition does not require 'community wind' to be proper cooperatives, and so large wind developers are able to set up a small group of 'stooges' in order to be eligible for the privileged conditions for community projects. According to the study, this is the result of the inadequate legal definition of community energy, which in the EEG 2017 only refers to voting rights, while other important aspects, such as actual ownership and profit shares, have been ignored. Furthermore it remains unclear when and if – due to lack of valid permits and speculation – successful bidders are going to be able to realize their projects.

The NRW state government has created additional uncertainties by announcing inappropriate minimum distance rules and other measures, like excluding ecologically less important forest areas for the use of wind power, or cancelling important requirements for zone planning in the state development plan – with the justification of securing the energy transition's acceptance. This is an argument that is hard to accept, given that surveys regularly show that a large majority in Germany support the energy transition and speeding up the implementation of wind energy. In a recent survey published by the *Fachagentur Windenergie an Land* (2017b), 83 per cent of participants see the expansion of onshore wind energy as highly important or important. In order to face individual protests we recommend that NRW's government focus more on information and education, and support for community power in NRW.

Policy recommendations

From WWEA's and LEE NRW's viewpoint, a rapid correction of the current auction design and a stronger support for the expansion of wind energy on the federal, state and municipal level is needed.

In order to meet the challenges of continuing the energy transition while fostering its local acceptance, and in view of the massive abuse of EEG's community power definition, WWEA and LEE NRW submit the following recommendations:

5) The introduction of a de-minimis rule, which would leave a feed-in tariff available for a maximum of three turbines (in accordance with EU commission's requirements) – instead of trying to support community power via privileges based on an insufficient definition. However, provisions should be taken that such rule cannot be misused by splitting projects in smaller units.
6) A clearer legal definition of community energy will still be important should the government seek to give privileges to community power projects. In that case the definition should refer to the four criteria (economic benefits, voting control, majority share, minimum period of ownership) identified and agreed to by experts at the 2nd International Community Wind Symposium 2017
7) Significantly increased auction volume for 2018 to allow the massive number of fully developed and approved projects to get realized and prevent stranded investments
8) Support mechanisms for holistic renewable energy technology approaches including e-mobility, energy efficiency, sector coupling and self-consumption

Bibliography

Allen & Overy LLP (ed.; 2016): The German Renewble Energy Act 2017 – An overview for foreign investors/banks, in: (http://www.allenovery.com/SiteCollectionDocuments/The%20German%20Renewable%20Energy%20Act%202017%20%E2%80%93%20An%20overview%20for%20foreign%20investors%20banks.pdf (11/12/2017).

Amelang, Sören (2016): The reform of the Renewable Energy Act. Germany's energy transition revamp stirs controversy over speed, participation, in: https://www.cleanenergywire.org/dossiers/reform-renewable-energy-act (11/12/2017).

Appunn, Kerstine (2016): EEG reform 2016 – switching to auctions for renewables, in: https://www.cleanenergywire.org/factsheets/eeg-reform-2016-switching-auctions-renewables (11/12/2017).

Bundesnetzagentur (BNetzA, ed.; 2017): Festlegung des Höchstwertes für die Ausschreibung für Windenergie an Land 2018, in: https://www.bundesnetzagentur.de/SharedDocs/Pressemitteilungen/DE/2017/29112017_WindanLand.html (11/12/2017).

Bundesverband Windenergie (BWE; ed.; 2016): Bundesländer TOP 5: Installierte Leistung gesamt, in: https://www.wind-energie.de/infocenter/statistiken/bundeslaender/bundeslaender-im-leistungsvergleich-mw (11/12/2017).

CDU Nordrhein-Westfalen/ FDP Nordrhein-Westfalen (ed.; 2017): Koalitionsvertrag für Nordrhein-Westfalen 2017-2022, in: https://www.cdu-nrw.de/sites/default/files/media/docs/nrwkoalition_koalitionsvertrag_fuer_nordrhein-westfalen_2017_-_2022.pdf (11/12/2017).

EnergieAgentur.NRW GmbH (EA.NRW; 2017): Bürgerenergie.Atlas, in: http://www.energieagentur.nrw/tool/buergerenergie/karte.php (11/12/2017).

Fachagentur Windenergie an Land (ed.; 2017a): EEG 2017 Berechnungstool, in: https://www.fachagentur-windenergie.de/fileadmin/files/EEG/FA_Wind_Rechenmodul_Korrekturfaktor_EEG_2017.xls (11/12/2017).

Fachagentur Windenergie an Land (ed.; 2017b): Umfrage zur Akzeptanz der Windenergie an Land. Ergebnisse einer repräsentativen Umfrage zur Akzeptanz der Nutzung und des Ausbaus der Windenergie an Land in Deutschland, October 2017, in: https://www.fachagentur-windenergie.de/fileadmin/files/Veroeffentlichungen/FA_Wind_Umfrageergebnisse_Herbst_2017.pdf (11/12/2017).

Gipe, Paul (2016): Wind Energy for the rest of us. A Comprehensive Guide to Wind Power and How to Use It, Bakersfield.

Landesamt für Natur, Umwelt und Verbraucherschutz Nordrhein-Westfalen (LANUV; ed.; 2013): Potenzialstudie Erneuerbare Energien NRW. Teil 1 – Windenergie, in: https://www.lanuv.nrw.de/fileadmin/lanuvpubl/3_fachberichte/30040a.pdf (11/12/2017).

Schick, Carlo/ Gsänger, Stefan/ Dobertin, Jan (2016): Headwind and Tailwind for Community Power. Community Wind Perspectives from North-Rhine Westphalia and the World, Bonn.

Schlandt, Jakob (2017): EEG. Die Offshore-Sensation und ihre Fallstricke, in: http://bizzenergytoday.com/die_offshore_sensation_und_ihre_fallstricke (11/12/2017).

UKA Umweltgerechte Kraftanlagen GmbH & Co. KG (2017): Ergebnisse der dritten Ausschreibung Windenergie an Land veröffentlicht, in: https://www.uka-gruppe.de/presse/detail/ergebnisse-der-dritten-ausschreibung-windenergie-an-land-veroeffentlicht/(11/12/2016).

Umweltbundesamt (UBA; ed.; 2017): Erneuerbare Energien in Zahlen, October 2017, in: https://www.umweltbundesamt.de/themen/klima-energie/erneuerbare-energien/erneuerbare-energien-in-zahlen#textpart-1 (11/12/2017).

Umweltbundesamt (ed.; 2013): Modellierung einer vollständig auf erneuerbaren Energien basierenden Stromerzeugung im Jahr 2050 in autarken, dezentralen Strukturen, in: https://www.umweltbundesamt.de/sites/default/files/medien/376/publikationen/climate_change_14_2013_modellierung_einer_vollstaendig_auf_erneuerbaren_energien.pdf (11/12/2017).

Weber, Tilman (2017): „Ich bin für einen funktionierenden Markt". Interview mit UKA-Chef, in: https://www.erneuerbareenergien.de/ich-bin-fuer-einen-funktionierenden-markt/150/434/105190/3(11/12/2017).

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