



Headwind and Tailwind for Community Power

Community Wind Perspectives from North-Rhine Westphalia and the World



WWEA
World Wind Energy Association



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About Partners

The **World Wind Energy Association (WWEA)**, an international non-profit organisation headquartered in Bonn, Germany, is working in cooperation with various governments and international agencies to promote wind energy uptake worldwide. With a network of associations and members in more than 100 countries, developed and developing economies alike, it has assisted many governments in developing effective policies for renewable energy technologies' promotion. One of WWEA's objectives is to create a stronger focus on community power and distributed energy supply within existing governmental, international, education, research and financial institutions.

The **Association for Renewable Energy North-Rhine Westphalia (LEE NRW)** is the advocacy organization of all renewable energy technologies in Germany's most populous state of North Rhine-Westphalia. The association is committed to a sustainable growth of the business location North Rhine-Westphalia. Its goal is to promote power supply that is fully based on renewable energy sources by 2050.

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Headwind and Tailwind for Community Power

Community Wind Perspectives from
North-Rhine Westphalia and the World

Executive Summary

Community Wind in North-Rhine Westphalia (NRW) and Germany is at cross-roads. On the one hand, it holds vast potential for the energy transition from a carbon-based (and, to a lesser degree, nuclear) energy regime towards a democratic, decentralised, emission-free, and truly sustainable energy system. Moreover, Community Wind bring high levels of much needed acceptance and contributes to local added value. On the other hand, the upcoming auctions are expected to put a strong competitive disadvantage upon Community Wind projects. As a result, the externalization of wind power “acceptance costs” could have drastic effects both on the further dissemination of Community Wind projects and the outcome of the German Energiewende.

The 2015 Paris agreement marked the biggest global commitment to the uptake of renewable energy technologies (RETs) in history; 195 nations agreed to reach greenhouse gas neutrality by the year 2050, a goal only achievable through a rapid phase-out of fossil fuels and transition toward a fully renewable energy supply. The chosen terminology still leaves opportunity for nuclear power, and fossil fuel energy in combination with carbon capture and storage. However, historically low levelised costs of energy and a slowly reconciling playing field allow for a simple and beautiful conclusion: Renewables are the new normal, and any other solution needs to be justified. Now the question comes to the fore of how to realize a socially, environmentally, and economically just transition towards a 100% renewable energy system. Such a transition has to meet the needs of, and find acceptance among the people who produce and consume renewable energy.

One pertinent option is the concept of Community Power, which is based on the idea of local ownership of RETs. The three main criteria that differentiate a Community Power project from conventional RET deployment are local shareholding (> 50%), local control and decision-making power related to the project, and the local distribution of the social and economic benefits generated through the project. (These criteria were determined by the WWEA Community Working Group, comprising experts from all continents). Community Wind is one of technology-specific subtypes of Community Power.

The WWEA “Community Power Strategies” project aims to identify favourable framework conditions for Community Power on a global scale. In this broader frame, a regional case study on Community Wind in NRW was conducted. Based on expert interviews with CEOs of Community Wind projects

and Community Wind facilitators, and an online survey addressed to a broader Community Wind stakeholder base, the following conclusions have been drawn:

To date, Community Wind remains an elusive concept that is neither legally nor politically defined in NRW (or in Germany). However, Community Wind is regarded as a form of wind energy deployment which entails many beneficial social and economic effects, most importantly as a means of enhancing local acceptance and local added value.

The single most important driver of Community Wind can be attributed to the guaranteed feed-in tariff introduced on the federal level by the Renewable Energy Sources Act (EEG). Other drivers comprise the current wind-energy-friendly state government of NRW, regional/municipal renewable energy initiatives, voluntary Community Wind standards, as well as regulatory guidelines aiming on the simplification of planning/permission procedures. On the other hand, rising complexity, high land leases offered by commercial wind developers, opposition from wildlife and nature conservation associations and a perceived decline of societal interest in RETs are said to impede the deployment of Community Wind. In addition, the upcoming auctions for onshore wind are expected to entail tremendous impediments for Community Wind deployment in NRW and Germany. The cornerstones of the upcoming auction design are said to put Community Wind projects at a strong competitive disadvantage, meaning independent bottom-up development of Community Wind projects would not be possible any more. The recently proposed – February 2016 – simplified qualification requirements for Community Wind projects can be considered as a first step into the right direction. However, those project proponents still have to compete against more experienced market players with a higher competitive advantage.

A catalogue of attractive future business and additional market activities for Community Wind projects includes repowering activities, regional electricity tariffs, storage, e-mobility and energy efficiency. However, the changing regulatory framework conditions do not allow for a broad based diffusion of those business lines, except for some trailblazer projects of experienced Community Wind implementers. Community Wind networks, information platforms and associations are considered to be crucial mediums for the diffusion of the Community Wind concepts and their innovative business lines.

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Section A: Case Study

Community Wind NRW

1. Study Context and Background

The global average surface temperature in 2015 is likely to be the warmest on record and to reach the symbolic and significant milestone of 1° Celsius above the pre-industrial era.

World Meteorological Organisation

1.1. Introduction

2015 marked the “beginning of the end” of the fossil fuel era. The long awaited UN climate change agreement or Paris agreement will probably one day be interpreted as the formal turning point in the long and difficult process of combating anthropologically induced global warming. It still needs to be ratified by 195 governments and it is not due to take effect until 2020; however, the immediate and salient solution to achieve greenhouse-gas neutrality by 2050 is the rapid deployment of renewable energy technologies. On the global scale, this paradigm shift has driven the divestment of \$2.6 trillion out of carbon based energy sources (Arabella Advisors 2015). Thus vast streams of investment will be directed into renewable energy technologies (RETs) in both, developed and developing countries. In 2015 global investments in RETs summed up to \$329 billion USD, surpassing its previous record set in 2011 (Bloomberg 2016).

Besides the Paris agreement itself, the activities and commitments of the global 100% renewable energy community reached a tremendous level in the last few years. All around the world, countries, regions, municipalities, or cities are voluntarily aiming to switch to a 100% renewable energy system¹. These bottom-up and top-down pressures on the incumbent energy regime add to the general decline of

the levelised cost of energy for RETs (IRENA 2015). All those factors make renewables *the new normal*.

Now the question arises how a socially just transition towards a renewable energy system can be implemented on the ground, taking into account the specific potentials and challenges of wind, solar, water, biomass and geothermal energy technologies, as well as catering for needs and concerns of the people who produce and consume renewable energy. The answer to this question is inherently linked with the evolution of wind power technology in general. Germany and Denmark can be seen not only as the pioneer countries of wind power in general, but also the two countries which gave birth to the Community Wind model (Valentine 2015; Toke 2009).

Up to the late 1990s wind energy was still a niche technology in Germany. Early wind power projects mainly attracted investments from farmers and local entrepreneurs in the wind-abundant coastal regions, who used their land to harness free and abundant wind resources. At that time, the model of shared and local ownership, the nucleus of the Community Power concept, was deployed to distribute financial risks that went along with costly upfront investments. In 2000, the German Renewable Energy Act (EEG) replaced the former Electricity Feeding Act (StrEG) and set the regulatory foundation for the boom phase of wind energy deployment in Germany. The combination of a 20-year, technology-specific, guaranteed payment for independent power producers proved to be success model for introducing RETs into markets dominated by carbon-intensive and nuclear technologies, which were directly and/or indirectly subsidised heavily. Attracted by the financial safeguards of the EEG, the number of Community Wind projects thrived, along

¹ A valuable information source of the status of 100% renewable energy is the website of the Global100%RE campaign: www.go100re.net

with added value for the regions of deployment and high levels of acceptance. It can be concluded that there was a strong co-evolution of both Community Wind and the guaranteed feed-in tariff.

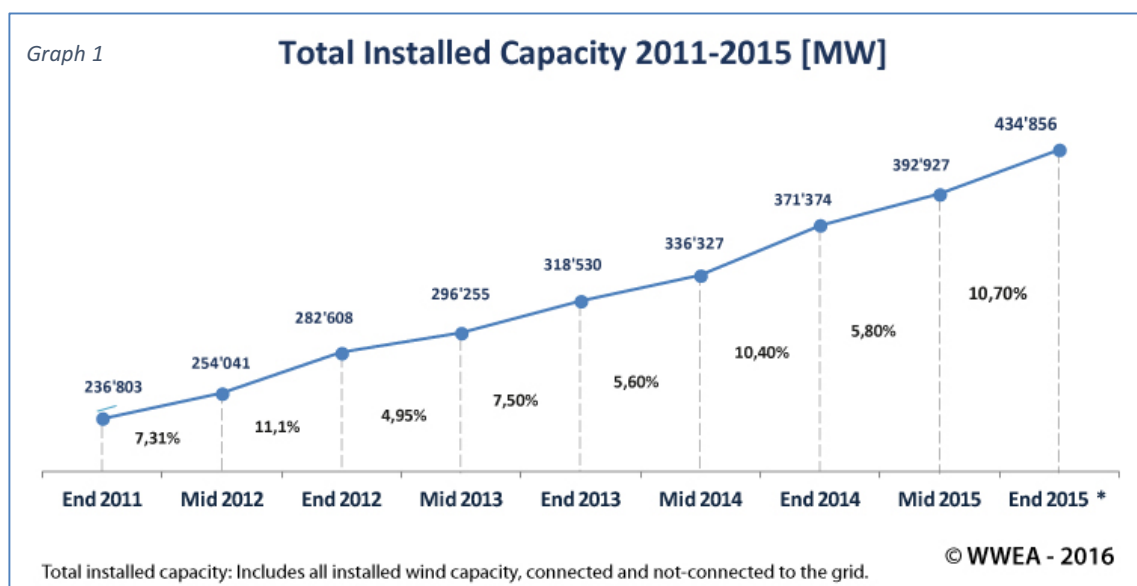
Today, variations of the German feed-in-tariff model have been enacted in 108 jurisdictions at a national or provincial level (REN21 2015) where they have established favourable market conditions and spurred the uptake of RETs. The WWEA statistic in Graph 1 shows that by the end of 2015 the global installed on- and offshore wind capacity reached nearly 435 GW, producing 4% of the world's electricity demand. Those numbers indicate that the infant years of wind power are definitely over.

When comparing country specific investment into RET, developing countries are now on par with developed countries (REN21 2015). But to what extent does this fast-paced uptake of RETs entail use of the Community Power model? Especially in developing countries, Community Power projects such as Community Wind, whether utility scale or small off-grid wind, hold vast potential, not only for leap-frogging carbon intensive technologies, but also as a sustainable and inclusive model of poverty alleviation. However, to date, the share of Community Wind projects around the globe is still negligible, and to our knowledge has not even been measured. So far, wind power uptake in developing countries has

been and is driven by large, globally operating utilities and project developers (Baker 2015; WWEA Community Wind Symposium 2016).

Against this backdrop, a world-wide trend toward competitive auctioning mechanisms is gaining momentum. While in 2005 only 5 countries had auctions or tenders² for RETs in place, by 2015 some 60 countries had implemented auctioning schemes. In theory, properly designed auctioning schemes could potentially contribute to increasing the share of Community Wind as well. In reality, the picture looks different, as most of the existing auctions designs introduce additional impediments for small market players and favour experienced, capital-strong project developers and international corporations.

The overall objective of the current WWEA "Community Power Strategies" project is to identify conducive framework conditions for Community Wind, particularly with regard to regulatory systems governing auctions. Throughout the project phase, which also includes an international Community Wind symposium (see Section B of the Report), a multiple level approach is applied. It follows the "think globally, act locally" principle: understand global problems and trends, and examine local responses in order to give sound policy recommendations. In this broader frame, the regional case study



² Tendering schemes usually include more than one selection criteria, while auctioning schemes select successful bidders only based on the price. However, the two terms are often used interchangeably.

on Community Wind in North-Rhine Westphalia (NRW) investigates how the Community Wind concept is deployed locally. While the specific findings would not immediately be generalizable on a global scale, the results are expected to provide valuable insights to inform and provoke further discussions on the uptake of the Community Wind concept.

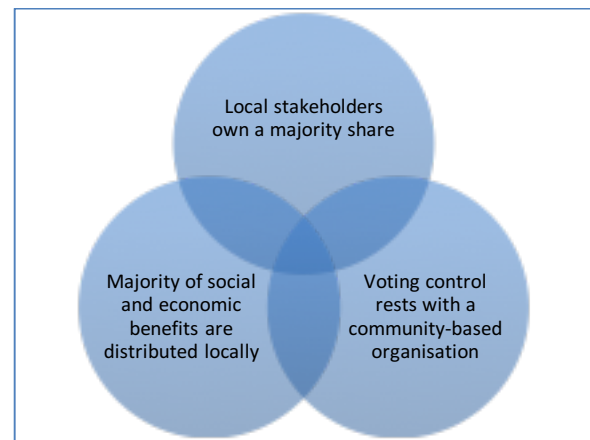
This study will investigate the current status of Community Wind in Germany's most populous and most energy intensive (with regard to energy supply and demand) state of NRW. It is based on expert interviews with CEOs of Community Wind projects, and a survey targeting members of wind power cooperatives and shareholders of Community Wind projects. The following sections will provide an overview of the concept of Community Wind, and its current deployment in Germany and NRW in particular. Following the introductory Chapter, the study design and methodology are outlined in Chapter 2. The main findings of the interviews and the survey are presented and discussed in Chapter 3. A short conclusion (Chapter 4) is followed by concrete policy recommendations based on the needs of Community Wind stakeholders (Chapter 5). The Section B provides summaries of discussions from the panels held at the Community Wind symposium in Bonn in January 2016 and Section C introduces WWEA's ten elements of a Global Community Power Strategy. Finally, Annex A provides an overview of the upcoming competitive auctioning scheme for on-shore wind energy.

1.2. Definition of key concepts: Community Power, Community Wind, Community Wind stakeholders

The concept of Community Power reflects a long tradition dating back to the pre-industrial era, when locally owned mills harnessed the abundant power of wind and water (Hvelplund 2014). In addition to those early forms of Community Power, a major share of the first distribution networks for electricity across Europe was in the hand of local cooperatives. However, with the centralisation of electricity systems, many shared local ownership models lost their purpose. After a stalemate period in the 1970s, the impacts of the first global oil crises, along with the first technological innovations of RETs, led to a revival of the Community Power concept. It was

due to the activities of Community Power stakeholders that RETs in the fields of wind, solar hydro and biogas were able to develop from a niche technology to a mature alternative of the incumbent fossil and nuclear energy regime (Hvelplund 2014).

The contemporary definition of Community Power is based on the cornerstones of shared and local ownership, democratic decision-making and a decentralised structure of energy supply. As described in detail below, according to WWEA's definition, Community Power projects include business models where citizens contribute at least 50% of the equity of the company, the investors come from the region where the plant is located, and the majority of the projects' benefits are distributed locally (Graph 2). The set up of the business model can range from energy cooperatives, joint investments (by a small group of local investors), local investments (joint investments of citizens and municipalities) or closed-end funds (Yildiz 2014). Community Power stakeholders also include individual owners of facilities like agricultural sole proprietorships, partnerships and smaller corporations.



Graph 2: Three main elements of Community Power

Community Wind, as one subtype of Community Power, comprises all kinds of wind energy projects that comply with the above mentioned characteristics. To date there are no international or national standards or legally agreed binding definitions in place, which could help to clearly differentiate between "commercial" wind projects and Community Wind. This makes global stocktaking of Community Wind projects a difficult endeavour. Since 2011, the WWEA uses the following definition, developed through intensive discussion among the members

of its Community Power working group (from all continents):

Community Wind is any combination of at least two of the following three elements:

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.

This definition is primarily used for WWEAs activities in the field of Community Wind, especially when referring to Community Wind on a global scale. In the study at hand, secondary data on Community Wind came from different sources, hence it is based on different conceptions of Community Wind³. Throughout the study, constant attention had been set on seeking a basic congruency between the different conceptions of Community Wind. For reasons of simplicity, the WWEA Community Wind is defined by the three elements detailed above.

When zooming in on Community Wind, it is also important to be able to differentiate between specific stakeholder groups that are usually involved in Community Wind. The following non-mutually exclusive Community Wind stakeholder groups can be distinguished:

1. Project implementers are the main drivers and entrepreneurs behind a Community Wind project. They usually come up with the vision or basic idea

behind a particular project. Their motives for realizing a project can range from making a political statement for a sustainable energy system to plain financial considerations.

2. Community Wind shareholders are landowners, members of energy cooperatives, partners of limited associations, or investors in Community Wind projects. They have a general interest in the Energiewende towards a decentralized energy system and are willing to invest in RETs as long as they can expect a reliable return on investment.

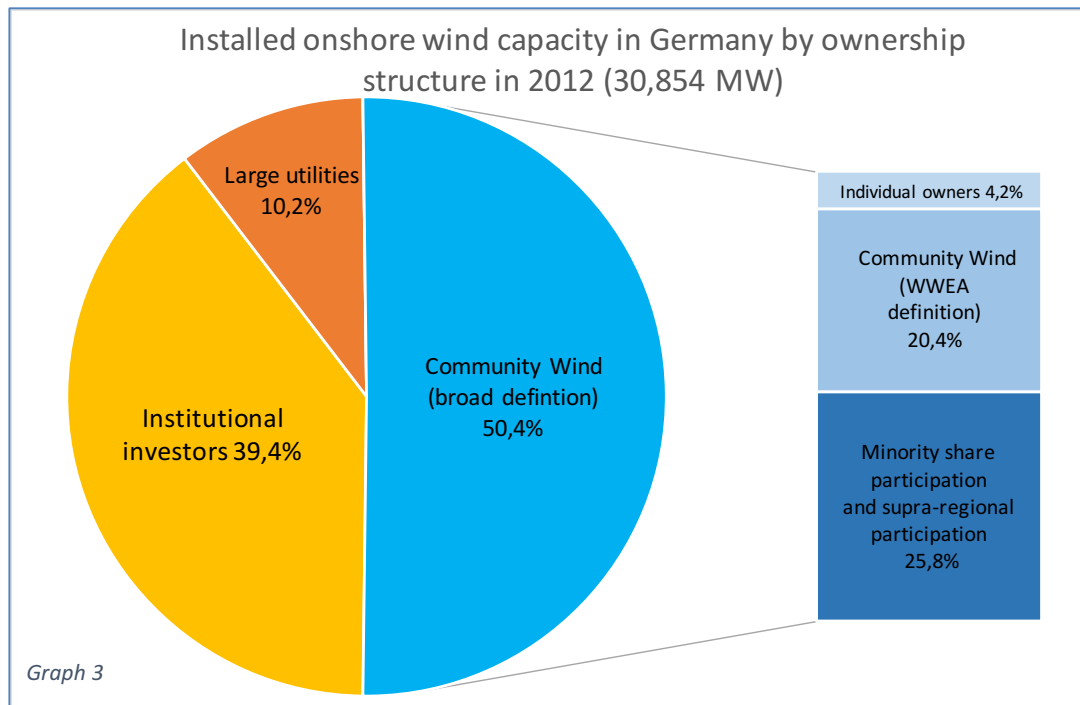
3. Community Wind facilitators are involved in setting-up of conducive framework conditions for Community Wind. This category comprises associations, networks, and NGOs, but also individuals, who work independently or cooperate with those institutions.

4. Prosumers are very active stakeholders of RETs in general. This includes solar roof systems, energy efficiency, home storage, local heating and E-Mobility. They often support Community Wind projects, assist in local transformation processes and function as role models.

1.3. Status of Community Wind in Germany

In 2012 Community Wind as defined by the WWEA accounted for 24.6% of the installed 30'854 MW onshore wind capacity in Germany (see Graph 3). Adding the share of projects with minority shareholding by locals and supra-regional debt and mezzanine-finance schemes for individual investors, a total share of 50.4% was reached. Institutional and strategic investors accounted for a share of 39.4%, while only 10.2 % was owned by large utilities (Trend:Research 2013). A study focusing on the ownership structures of newly added onshore wind capacity in the period between 2012-2014 concludes that roughly 15-16 of that capacity was realised by Community Wind implementers and 16-20% of this capacity was then operated as Community Wind (BWE 2015). The slight difference between the two stages (realisation and operation) was explained by the fact that some projects might have been realized by larger wind developers that have been commissioned to

³ For a thorough conceptualization of Community Wind see Trend:Research 2013 (in German)



sell the project to Community Wind stakeholders afterwards. However, the results of this study cannot easily be interpreted against the findings of the previous 'stocktaking' study because of a lack of consistency between the deployed Community Wind definitions used.

The high share of Community Wind in Germany can be explained by several conditions/factors. Firstly, decentralized onshore wind deployment is characterized by relatively high transaction costs and low rates of return on investment, which may deter commercial developers and investors (Yildiz 2014). In contrast, individual investors are more attracted by long term schemes with moderate yield expectations of 4-6%, especially in times of persistently low interest rates on the capital market (Brühl and Walz 2015). In addition to this, the relatively high income level in Germany and safety of investment through a guaranteed feed-in tariff (see Chapter 1.4) allows investment volumes to be jointly raised by local population. Besides economic motives, local ownership and participation can be seen as a valuable enrichment, rather than a transaction cost. Community Wind stakeholders can play an active part in

changing local energy policy and planning and contribute individually to the transition of the energy system.

Lastly, a very important but sometimes underestimated factor is that Community Wind contributes significantly to local acceptance of wind turbines (Valentine 2015; Musall and Kuik 2011). In the past, acceptance of wind turbines was often framed as a positive side-effect. Today, against the backdrop of rising wind turbine penetration, larger turbines as well as declining acceptance rates of commercial projects, Community Wind can be a decisive condition for the realisation of a wind power project.

In Germany, most Community Wind projects are organised as limited partnerships, energy cooperatives, or a combination of both. Table 1 gives a short overview of the regulations those legal entities have to comply with. In addition to those basic forms of equity based Community Wind projects, debt and mezzanine-finance schemes exist. They allow individual investors to participate with less entrepreneurial risks, but exclude them from taking an active part in conceptual decision-making processes.⁴

⁴ For a short overview on debt and mezzanine capital schemes see Yıldiz 2014 (English) or EnergieAgentur.NRW 2014 (German)

An overview of legal entities

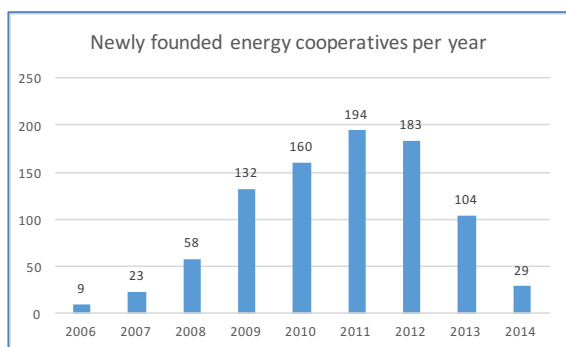
	Cooperative	Limited partnership
Liability	- Shareholders are not personally liable - Liability only extends to the cooperative's assets	- Shareholders are not personally liable - GmbH is fully liable for KG - GmbH is only liable up to the level of its business assets
Bodies	- Management board - Supervisory board - General assembly	- Executive Director - Advisory / supervisory board (possible) - Shareholder assembly
Taxation at the time the company posts a profit		
Trade tax	- No exemption - No operating expenses - Does not apply to shareholders	- First 24,500 euros are exempt - No operating expenses - Applied to shareholders at 3.8 times the level of applicable trade tax for maximum actual trade tax
Corporate tax	- Only the company is taxed 15 % corporate tax 5.5 % solidarity surcharge	Company is not taxed
Taxation is applied when shareholders use profits		
Profits	- Only distributed when there is a net profit - Taxation only for inflow: 25 % withholding tax, possibly with 5.5 % solidarity surcharge 9 % church tax - In the case of an individual tax rate, application for review of lower tax rate possible - Tax-free income from capital investments deducted, - Business expenses cannot be deducted	- Profits are distributed for the fiscal year based on capital shares - Taxation with individual tax rate - No tax-free income from capital investments - Costs related to holdings – such as for financing – can be written down as special business expenses
Losses	- Losses are carried forward - Shareholders do not have a stake in losses	Losses are distributed for the fiscal year based on capital shares up to the maximum capital share (Section 15a EStG)
Type of income for shareholders	- Income from capital assets 801 euros per person tax-free	- Income from business operations - No tax-free income

Table 1: German Wind Energy Association (2012)

1.3.1. ENERGY COOPERATIVES

In Germany the cooperative business model has a long standing tradition, with the first cooperative starting its operation in 1863 (DRGV 2015). Since then cooperatives, as jointly owned and democratically controlled businesses, have successfully established themselves in a variety of sectors. Cooperatives usually base their operation on the following seven core principles: voluntary and open membership; democratic member control; economic participation by members; autonomy and independence; education, training and information; cooperation among cooperatives; and concern for community (Viardot 2013).

Those prerequisites make the cooperative business model a perfect vehicle for Community Power and Community Wind projects, as cooperative members have the chance to participate financially and to take an active part in the decision-making process. Every cooperative member has one vote, no matter how many shares of the cooperative each holds. The democratic idea of cooperatives is also reflected in the average minimum share of 738 €, which allows for participation of less capital-endowed individuals. One fourth of the current energy cooperatives even work with a minimum share below 100 €. In 2014, the average financial involvement of energy cooperative members was 3'298 € (DRGV 2014).



Graph 4: own illustration based on DRGV (2014)

The 973 existing German energy cooperatives can be classified either on a resource basis (solar, wind or bio energy) or on an activity basis (energy production, energy consumption or services). 75% of all energy cooperatives are engaged with solar power, but the solar energy cooperative boom has declined drastically with the amendment of the Renewable Energy Act in 2012 (see Graph 4), which introduced

strong remuneration cutbacks of solar projects. In addition, the obligatory auctioning for large-scale solar introduced in 2014 is also believed to have deterred many potential solar cooperatives.

While the last 3 years already have been relatively bleak for solar cooperatives, electricity production through wind power continues to be a viable option for energy cooperatives. Community Wind cooperatives primarily produce energy from wind turbines, but their portfolio may include other activities or resources. In 2014, 68 of the German energy cooperatives were attributed to onshore wind energy, with a small number of additional wind cooperatives expected by the end of 2015. Against the backdrop of the upcoming auctions for onshore wind from 2017, however, Community Wind cooperatives are expected to face an opaque trajectory similar to the one of solar cooperatives.

1.3.2. CLOSED-END FUNDS/LIMITED PARTNERSHIPS

An organisational set-up for Community Wind projects that is more commonly used than energy cooperatives is the closed-end fund. Like cooperatives, these constitute a business vehicle with the primary aim to raise equity capital through a large number of investors. Most of the German Community Wind, as well as commercial wind farms, are realized through the legal form of a GmbH & Co. KG., a limited partnership with a limited liability company as general partner in charge of business management.

In case of Community Wind farms, project implementers manage the limited liability company, while local residents or other individual investors financially participate as limited partners. In contrast to Community Wind cooperatives, closed-end funds are less suited for Community Wind projects which explicitly aim to include all shareholders in entrepreneurial decision-making processes and exercising control on management. On the other hand, closed-end funds allow for various organisational set-ups. For instance, a GmbH & Co. KG. can realize large wind farms and transfer a share of its portfolio to a Community Wind cooperative, or allow individual local investors to financially participate through debt and mezzanine capital schemes. In order to be able to offer financial participation to investors,

closed-end funds generally have to fulfil strict prospectus requirements.

Unfortunately, no statistical data on the amount and composition of Community Wind organised through close-end funds is available. The German association for closed-end funds (VGF) offers empirical studies on closed-end funds within the energy sector in general. However, as those statistics include non-renewable energy projects and do not differentiate between commercial wind farms and Community Wind, their usefulness is limited (Yildiz 2014).

1.3. Upcoming Auctions for Onshore Wind

The introduction of a guaranteed feed-in tariff (FIT) through the Renewable Energy Sources Act (EEG) in 2000 was a crucial framework condition for the rise of Community Power (Toke 2009; Li et al. 2013; Yildiz et al. 2015). Since then, all operators of renewable energy plants were statutorily entitled to receive technology-specific and progressively reduced payments for electricity exported to the grid. In 2012, an amendment of the EEG introduced the market premium and the flexibility premium for plant operators who directly sell their electricity from renewable sources⁵.

From the perspective of Community Wind, sufficient remuneration per kWh for a period of 20 years contributed significantly to the calculability of returns of investment, eventually reducing financial risks that go along with high upfront investments. In addition, the underlying reference revenue model enabled the development of Community Wind projects at sites with medium wind potential, thus contributing to a level playing field for wind deployment across Germany. The German FIT proved to be a success model for the market introduction of RET and was replicated over 108 times around the globe (REN21 2015).

Against the backdrop of rising market shares of RET and related questions of their sound integration into the energy system, the European Commission enacted its new Energy and Environment State Aid

Guidelines in 2014. Those guidelines require that, as of 2017, support for renewable energy projects generally be awarded in competitive bidding processes. Such a system does little to support the integration of smaller players into the power market. The main motivation may lie in an effort to control the extension quantity and to push back smaller investors such as Community Power projects, resulting in plannable market conditions favourable for the traditional utilities, which currently face economic troubles due to their previous inertia in renewable energy investments (WWEA Community Wind Symposium 2016). In any case, the German government decided to drop the successful FIT model and to replace it with auctions for onshore and offshore wind and large-scale photovoltaics installations (>1 MW) based on the following three objectives:

Three official guiding principles of the upcoming auctions for RET (BMWi 2015)

1. Quantity control of renewable energy deployment
2. To keep to a minimum overall cost arising from the Renewable Energy Sources Act
3. To use auctions to create a level playing field for all of the players involved

The feedback from Community Wind stakeholders with regard to the upcoming restructuring was mainly negative⁶ as auctions are expected to put small project developers at a competitive disadvantage. Compared to large professionalized project developers, which can benefit from various scale effects (e.g. lower purchase prices for components, higher credit ratings) and bigger projects portfolios, “small bidders” lack the know-how for strategic bidding and could be deterred by the risk of not being able to compensate for a single unsuccessful bid. Hence, the objective of maintaining the currently high level of the diversity of players (e.g. small and medium-sized firms, energy cooperatives, local project developers, etc.) is seen as conflicting with the idea of auctions. The results of the first two large-scale photovoltaic auctioning rounds added

⁵ For a more detailed historical overview on the Renewable Energy Act, see Valentine 2015

⁶ For a German analysis and evaluation of Community Power/Community Wind stakeholder statements in the

official BMWi consultation process see Bündnis Bürgerenergie e.V. (2015)

up to the negative feedback, as not a single Community Power project won a concession. It was only in the third auction round that five Community Power projects, out of a total of 43 accepted bids, were able to be successful in the auction.

One possible solution to maintain the diversity of players is to give small actors and/or their projects a special treatment within the auction or to exclude them from the auction. This option is embedded in the guidelines of the European Commission, which allow small installations to be exempted from participating in competitive bidding processes. Small installations are defined as those producing less than 6 MW of wind power (or 6 generation units). In January 2016 the EU Competition Commissioner Margrethe Vestager 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 megawatts (Vestager 2016).

Based on this so called de-minimis rule, research institutes as well as Community Wind practitioners and facilitators drafted exemption criteria and fed them into the official consultation process on the German auctioning design. For now, however, the Federal Ministry for Economic Affairs and Energy (BMWi) decided not to include exemptions – seemingly indicating that one motivation behind the new legislation is indeed to exclude small investors from the market.

“Other than that {onshore wind <1 MW}, the Renewable-Energy-Sources-Act does not provide for any further exemptions designed to maintain current levels of diversity of players. The exemption for wind farms composed of no more than six installations that exists under the guidelines on state aid for environmental protection and energy, for instance, has not been included on the grounds that it would result in a more segmented market for installations, reduce the level of competition, and lead to solutions that are economically inefficient.” (BMWi 2015)

Nonetheless, in February 2016 (after the finalization of the empirical research and the WWEA Commu-

nity Power Symposium), the BMWi published an updated version of the key points on the design of the upcoming onshore wind auctions which included specific simplified qualification requirements for “worth protecting” Community Wind projects. Those include participation in the auctioning process without a prior approval under the Federal Emission Control Act (BImSchG approval) and a bid bond of only 15 € per kW due by bid submission and another 15 € per kW after bid approval. The BMWi grants those simplified qualification requirements for projects that comply with the following criteria:

- A minimum of ten shareholders of the bidding project corporation have to be natural entities
- Each member’s share of voting rights must not be higher than 10% and all natural entities have to have at least 51% of all voting rights
- A minimum of 51% of the voting shares has to be held by shareholders who live in the district (Landkreis) in which the wind farm will be erected
- The project size is limited to a maximum of 6 turbines and a maximum of 18 MW
- The project company and all of its members must not have been participating in onshore wind auctions within the past 12 month (BMWi 2016).

The latest version of key points for the upcoming auctions for onshore wind was published in February 2016⁷, and the legislative process on the amendment of the Renewable Energy Sources Act (EEG) is expected to be completed by Summer 2016.

1.4. Introduction to the Case Study Region North-Rhine Westphalia

NRW is Germany’s most populous state with a population of 17.5 million, as well as the fourth largest by area (34’083 km²). The largest part of the state is covered by agricultural areas (almost 52%) and forests (25%). In 2013 the state government of NRW

⁷ An overview on the key points for the upcoming onshore wind auctions and a detailed explanation of the

one-tier reference revenue model can be found in Annex A

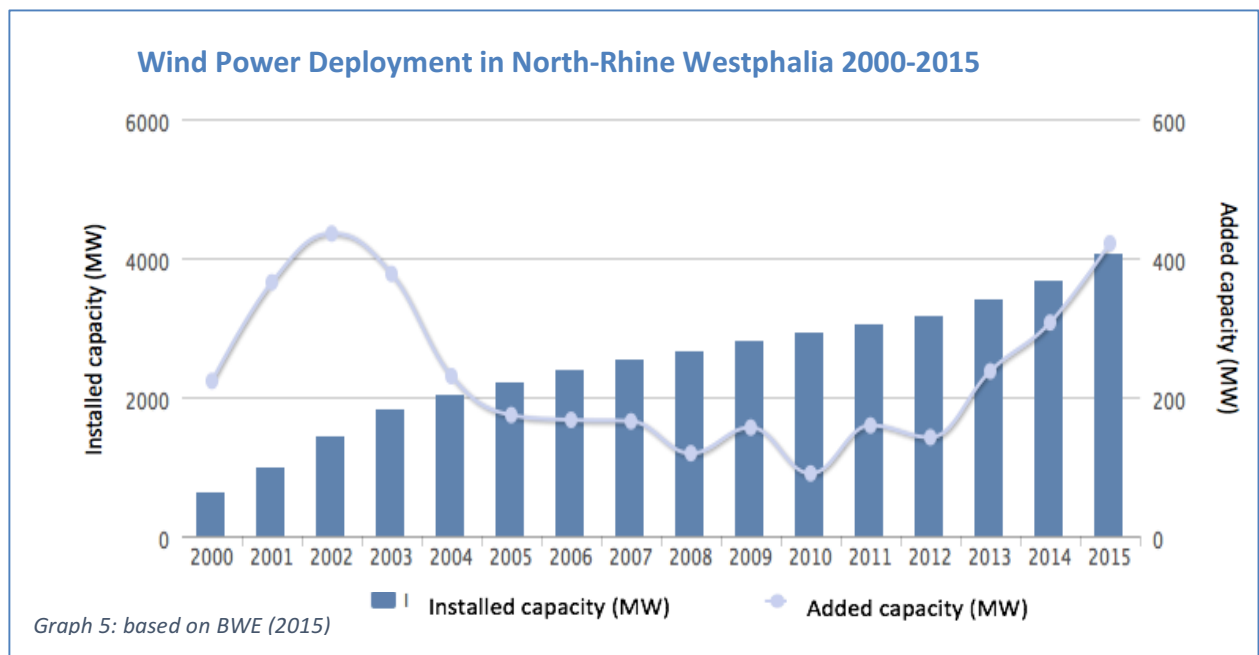
enacted the Climate Protection Law with the ambitious aim to reduce its total carbon emissions by 25% by 2020, and by 80% by 2050 against the base-line of 1990 (LANUV 2015). One means to reach this goal is seen in the deployment of RETs, especially wind energy. The respective target on wind energy deployment is to increase the share of electricity produced from wind power from the current 4 % (5,9 TWh) to 15 % (20,7 TWh) in 2020. A wind potential study from 2012 came to the conclusion 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 % and 90 % of the reference revenue (LANUV 2015).

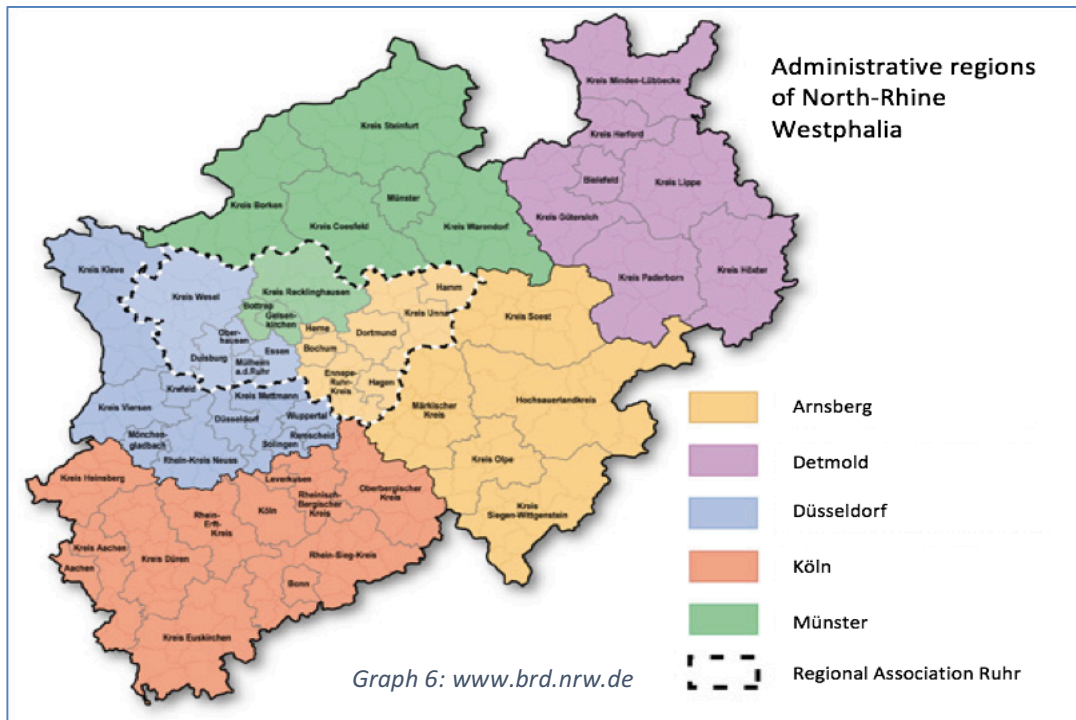
With 3'073 wind turbines adding up to an installed capacity of 3'883 MW (as of September 2015), NRW takes the fifth rank of wind power capacity across the 16 German states (LEE NRW 2015). Graph 5 shows the development of wind energy extension in NRW. After a first boom phase lasting from 2000-2002, the extension rates declined. The subsequent stagnation can partly be attributed to the coalition government of the conservative and the liberal party that lasted from 2005-2010, which clearly expressed their negative attitude toward wind energy. This attitude was epitomised through the introduction of extremely height distance recommendations and a ban on wind power deployment in forests. Those restrictions were abolished by the current coalition government of social democrats and the

green party, which took over in 2010. Since then a second boom phase gained momentum, and this is expected to continue at least until the introduction of the competitive auction scheme.

Important documents for wind power deployment in NRW

- Wind Energy Decree (latest version 2015)
- Guideline Wind Energy in Forest Areas (2012)
- Guideline Species and Habitat Protection in Wind Energy Planning (2013; to be evaluated in 2016)
- Climate Protection Law and Climate Protection Plan NRW (2013/2015)
- Development Plan of NRW (current version as of 1995, revision currently under development)
- Regional Development Plan of the respective administrative region (many of them being evaluated)
- Land-use plan of the respective municipality





NRW is divided into six administrative regions: Arnsberg, Detmold, Düsseldorf, Köln, Münster and the Regional Association Ruhr (see Graph 6). Those administrative regions are in charge of the Regional Land-use Plans, which in turn address the overarching objectives set by the Development Plan of NRW. The draft of the Development Plan, which is expected to be enacted in 2016, is set to reserve 1,6 % (54'000 ha) of NRW area for wind power deployment, distributed over the administrative regions according to their respective potentials (ranging from 18'000 ha within Arnsberg to 1'500 ha within the Regional Association Ruhr). With regard to wind power planning, the regional development plans only point toward potential areas that are not in conflict with other land-uses. Eventually, the most important planning authorities for 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 Federal Immission Control Act. Municipalities have to consider the priority zones prescribed in the respective regional plans, but they are also free to assign further priority zones on their own.

The Wind Energy Decree, which was recently updated in November 2015, includes recommendations and legal references with regard to land-use designation, repowering and height limitations, for

municipalities, investors, project planners and citizens. Its primary aim is to simplify the wind power deployment by setting internally obligatory references for subordinate authorities. So far, it is the only official document by the state of NRW which introduces the concept of Community Wind ("Bürgerwindparks"). Here, Community Wind farms are framed as wind farms that allow for a financial and conceptual participation of local citizens. It gives several recommendations on how a Community Wind farm can be set-up, but refrains from establishing a thorough definition or proposing standards. In terms of planning law, Community Wind farms have to be judged as any other wind farm (LANUV 2015).

To date, roughly 100 energy cooperatives with 23'000 members exist in NRW. Most of those energy cooperatives work with solar energy, and only 6 energy cooperatives can be attributed to Community Wind. The general decline of newly founded energy cooperatives can also be observed in NRW, as the numbers more than halved from 22 in 2011 to 8 in 2014. The Climate Protection Plan tries to address this decline by aiming for the establishment of 100 new energy cooperatives in the upcoming years. While the numbers of energy cooperatives are monitored by the regional cooperative association (RWGV), there are no statistics on the share of Community Wind farms set-up as closed-end funds.

The Energy Agency of NRW (EnergieAgentur.NRW) runs a project database of Community Power in NRW. By the end of 2015, it counted 39 projects attributed to wind energy, 22 of them having a portfolio including other RETs (Energieagentur.NRW 2015). Those numbers are based on voluntary registration by the projects and include minority shareholdings as well as debt and mezzanine capital schemes, but for now this represents the most sophisticated approach to taking stock of Community Wind projects in NRW.

Throughout NRW several municipal climate protection or renewable energy initiatives were set up, many of them addressing Community Wind. The County of Steinfurt, which decided to become energy self-sufficient by 2050, can be depicted as a best-practice case of administrative Community Wind initiatives. Steinfurt created a Wind Energy Service Centre under its Department for Climate Protection and Sustainability. Additionally, the county developed a set of voluntary Community Wind guidelines, and since their introduction, every newly realized wind farm in the jurisdiction has complied with the following standards:

Community Wind guidelines of Steinfurt County:

1. Inclusive stakeholder process/consultation: land owners, local residents, farmers, citizens, municipalities
2. Participation opportunities and compensation payments also for indirectly affected land owners, residents and other stakeholders
3. Guarantee of a financial and conceptual participation of citizens: minimum equity share of 25% in the hands of individual, local residents (not from the group of land owners)
4. Avoidance of majority shares of individual/institutional owners
5. Low minimum shares of roughly 1'000 Euro
6. Inclusion of local/regional municipal public utilities as marketing partners
7. Inclusion of regional banks as financing partners for debt capital and investment shares (Kreis Steinfurt 2015).

2. Study Design and Methodology

Over the last few years many studies on Community Wind have been conducted, especially for the Germany case. In 2014 and 2015, against the backdrop of the upcoming auctions and their (mostly negative) anticipated effects on Community Wind, the topic stood high on the agenda of associations, research institutes and specialist journals. Unfortunately, most of their outputs were not, or were only partially, based on the perspective of the practitioners of Community Wind. The study at hand aims to fill this gap as well as to draw policy recommendations, which can assist in maintaining, or even enhancing, the share of Community Wind in the future. This also reflects the BMWi's objective of maintaining the current "diversity of players" in the upcoming auctions.

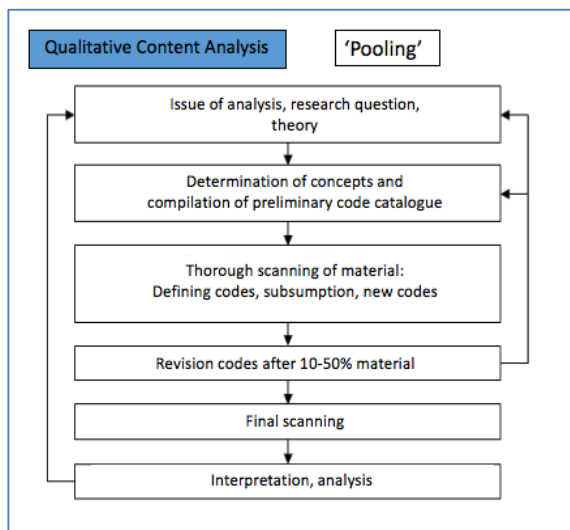
The cross-sectional study follows an explorative approach as it aims to give a thorough overview on the current challenges and potentials of Community Wind in NRW from an experts' perspective. Experts are defined as Community Wind stakeholders, primarily CEOs ("project implementers") and Community Wind facilitators with a minimum of five years' experience in project development, the operation of Community Wind farms, or facilitation of the concept of Community Wind through individual or institutional activities (e.g. association work, administration, and public sector). In addition, the perspective of Community Wind shareholders was included, as a trickle-down effect from expert knowledge can be expected. However, this stakeholder group was only included in the population of the online survey.

Overarching research questions:

1. How do Community Wind stakeholders define the concept of Community Wind?
2. What are the beneficial effects of Community Wind?
3. What have been the drivers and barriers for Community Wind in NRW?
4. How do Community Wind stakeholders assess the upcoming auctions?
5. What are attractive business models for Community Wind in the future?

Those research questions set the foundation for a mixed-methods approach, comprised of expert interviews and an online survey. While the qualitative method of expert interviews allows for a 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. As a first step, a literature review on relevant policy documents and studies on 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 an expert from the EnergieAgentur.NRW. In total, ten expert interviews were conducted between 26 October and 16 November 2015, eight of them as face-to-face interviews and two via phone. The online survey was open from 30 October to 30 November 2015.

The analysis of the qualitative interview data was 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 was 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 the ones given by the researcher.



Graph 7: Mayring (2002)

Eventually, the resulting code catalogue was employed 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. The analysis of the online survey results was based on descriptive statistics.

3. Findings and Discussion

3.1. Composition of respondents

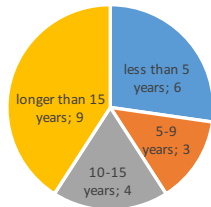
As indicated above, there are no absolute numbers available on the number and scale of Community Wind projects in NRW. Hence, the only available reference value of 39 projects was set as the survey population. In the course of the project, 17 CEOs of Community Wind farms have been queried, seven of them through expert interviews and ten of them through the online survey. In strict statistical terms, the sample does not allow for generalizations on the population. However, the sample also includes two Community Wind facilitators, several CEOs with bigger project portfolios, as well as a Community Wind project developer which is advising up to 80 projects. 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 valid overview on the positions of Community Wind stakeholders in NRW.

Composition of the expert interview sample

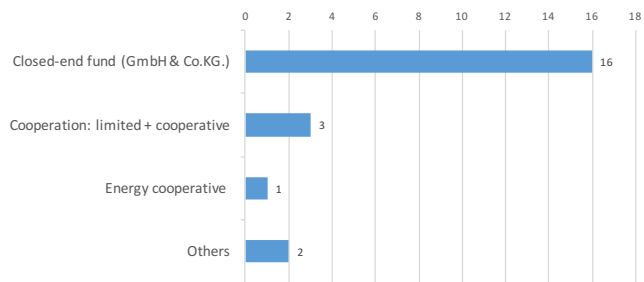
- 1 expert on Community Power business models working with the EnergieAgentur.NRW
- 1 expert on energy cooperatives working with RWGV (regional cooperative association)
- 1 CEO of a Community Wind project developer currently advising 80 projects
- 1 CEO of a Community Wind project under development for 6 years
- 1 CEOs of a Community Wind energy cooperative
- 5 CEOs of Community Wind projects organised as closed-end funds
 - 3 of them with a bigger project portfolio also cooperating with energy cooperatives

Online survey sample and background of respondents

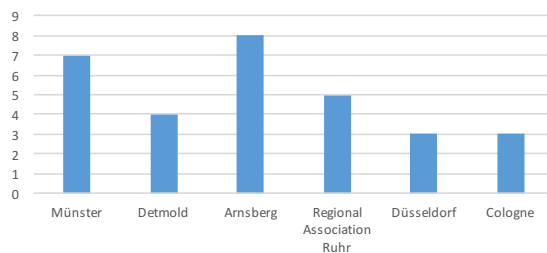
How long have you been active in the field of Community Wind?



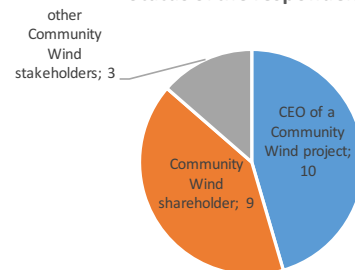
How is your Community Wind project organized?



In which planning region of NRW are you primarily active?



Status of the respondents



Graph 8

The majority of respondents (COEs and shareholders) can be attributed to closed-end funds. Two independent Community Wind cooperatives contributed, one of them through an expert interview and one respondent via the online questionnaire. Six CEOs of closed-end fund projects indicated that they are collaborating with a cooperative in the operation of wind farms.

3.2. Reflection on the concept of Community Wind

This following subsection is only based on the results of the expert interviews, as the semi-structured interview guideline allowed for an open reflection on the concept of Community Wind. Most of the interviewees pointed out that Community Wind as a concept is not legally defined, neither in Germany nor in NRW. Instead, the concept is open to being defined according to the needs and beliefs of Community Wind stakeholders.

In this connection, project implementers with small portfolios mentioned that the lack of a common Community Wind definition and standards leaves leeway for purely “commercial” wind developers to frame their projects as Community Wind without complying with the underlying principles of the concept. Three respondents mentioned that municipalities that are interested in fostering the deployment

of Community Wind in their jurisdiction have difficulties in differentiating between Community Wind projects and their mimics. In contrast, interviewees with larger project portfolios were less concerned about flexible interpretations of Community Wind.

Many experts explained the concept of Community Wind against the background of commercially operating wind farms by large project developers. The latter were framed as projects that primarily aim to produce large investment volumes for institutional investors not connected to the region of deployment. In addition, the project development costs (“soft costs”) of commercial wind projects were said to be significantly higher (in some cases up to 25% compared to 5-10% for Community Wind), because larger project developers are interested in making profits by selling the projects after realization, rather than in the operation phase. As a result, the added value generated through the projects is expected to be extracted from the region.

The following catalogue summarizes recurring characteristics ascribed to Community Wind by the interviewees; the numbers in brackets indicate the number of experts who stated those characteristics:

Frequently mentioned (5-10 times)

- Project development by local citizens, motivated through local citizens, financed by local citizens (9)
 - Exception 1: projects that have been initiated locally, but realized by non-regional project developers with the condition that primarily local investors are given the chance to participate (5)
 - Exception 2: In case the equity capital cannot be raised by local investors, the project should be opened up for a wider participation of individual investors (8)
- Denomination structures (division of shares) that allow financial contributions of a broad basis of local investors (9)
- Significant contribution to local added value (9)
- Community Power does not exclude larger wind farms (8)
- Debt financing through local banks (5)
- Optional local foundations for distribution of project revenues (5)
- Relatively high share of honorary/voluntary activities in planning and operation of Community Wind (5)

Less frequently mentioned (2-4 times)

- Wind farm owned by a small number of local farmers and landowners is not a Community Wind farm (4)
- Share of soft costs not higher than 5% (2) or 10% (1)
- Transparency in all activities, especially of financial aspects (3)
- Legal entity of the Community Wind project in the same municipality as the turbines (3)
- Project development and operation by the same group of people (2)

From all the mentioned characteristics, only one is not in line with the WWEA definition of Community Wind. Wind farms that are operated by a small number of local farmers and landowners were excluded from the concept of Community Wind by four experts, because those projects were said to cluster the derived benefits only in the hands of few local investors. A strict application of the WWEA standards would still identify this specific form of project as Community Wind.

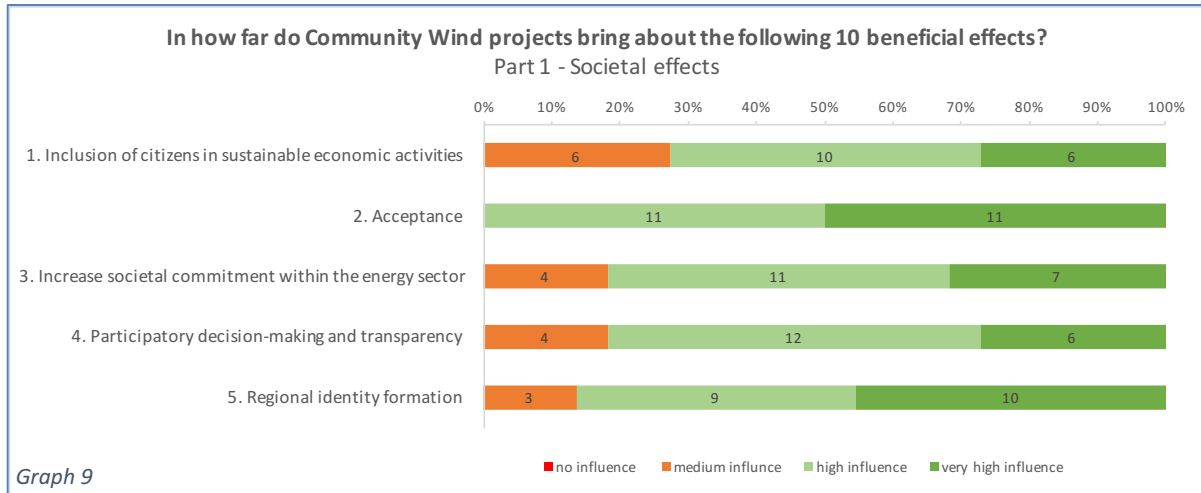
Municipal participation in Community Wind projects was seen as a rather contested issue. Some of the interviewees included municipal participation (e.g. planning and/or operation, shareholding) in their definition of Community Wind, justified by the local added value and the “people-oriented” approach municipalities generally follow. Others excluded wind projects primarily owned and operated by public utilities from the Community Wind concept, as those are considered to oppose the underlying community principle.

There was also no consensus on the question how to operationalise the crucial term “local”. The majority of experts refrained from deploying strict spatial boundaries for Community Wind projects and pointed to conceptual flexibility in case equity capital cannot be raised locally. Some utilized the spatial jurisdictions of the host municipality to define “local”. One project implementer first offered project shares for residents of the host municipality and later widened the target group for residents of the host county. Another interviewee suggested a locality criterion, which requires a minimum of 75 % of limited partners should come from the same postal code area as the turbine location.

The two interviewees representing cooperatives were asked about the unique features of cooperatives for Community Wind deployment. Both of them indicated that cooperatives are not solely investment vehicles, but inclusive business models, which enable conceptual participation for all cooperative members. Furthermore, cooperatives were framed as “easy and comprehensible” business models allowing lay persons to contribute to sustainable development.

3.3. Beneficial Effects of Community Wind

In 2015 a study of the beneficial effects of Community Power in Germany was published. It concluded that Community Power projects induced ten positive socio-economic effects, of which five can be framed as societal effects and the other five as economic effects (IZES 2015). A catalogue of those ten effects was included in the online questionnaire with the objective to measure and evaluate the effects from the perspective of Community Wind stakeholders in NRW. The interviewees were not directly asked to assess the effects; however, during



the interviews all of the effects had been mentioned, except the effect that ascribes the creation and preservation of jobs to Community Wind.

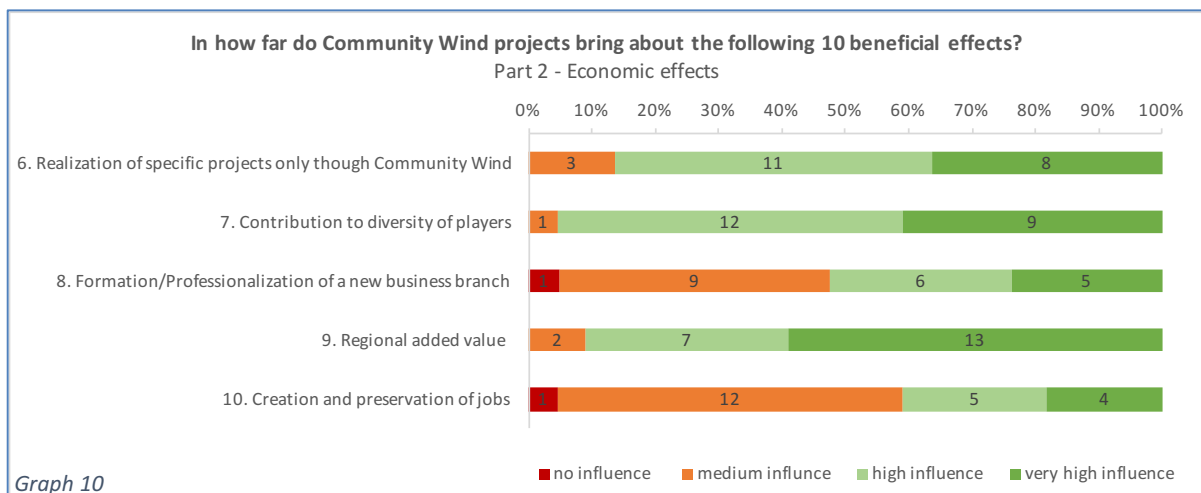
The first five factors are framed as societal effects. As Graph 9 shows, Community Wind is seen as having a high influence on inducing inclusion of citizens in sustainable economic activities (73%), acceptance (100%), societal commitment within the energy sector (82%), participatory decision-making/transparency (81%), and regional identity formation (86%). None of the presented societal effects was rated with the label “no influence”.

Across all of the ten effects, the societal effect of “acceptance” was rated the strongest from the perspective of Community Wind, a position that was also mentioned by all interview partners. The positive effect of Community Wind on local acceptance is also backed by many empirical case studies. One study conducted in southeast Germany in 2011 found out that 62 % of the residents next to a Community Wind farm expressed a positive or very positive opinion and only 1 % had a negative or very

negative attitude. In contrast, most residents next to a commercial wind farm expressed a neutral opinion (47 %), while 26 % felt positive or very positive and 27 % felt negative or very negative (Musall and Kuik 2011).

Nonetheless, some of the interview partners pointed out that the deployment of the Community Wind model is not a sufficient condition for the absence of local resistance against wind farms. Counter movements like citizen’s initiatives also form up against Community Wind projects. However, the interview partners assessed the opposition levels against Community Wind farms lower than for commercial projects that are not locally embedded.

Out of the five beneficial economic effects ascribed to Community Power, only four effects are assessed as being significantly influenced by Community Wind. 86% of the respondents said that Community Wind has a high influence on the realization of projects, which either failed or were not approached by other players in the market. This finding can also be illustrated by the experience of one interviewee,



who realized a project, which first had been followed by a large project developer, but failed because of lacking local acceptance. Furthermore, it was mentioned that projects with expected low return on investment, for example 3-4%, are less likely to be realized by institutional actors, but for Community Wind stakeholders those projects are still an attractive option.

The second strongest rating among all the effects was attributed to the role that Community Wind plays for the diversity of players (95%). In contrast, the contribution to the formation and professionalization of a new business branch received the second weakest rating, with only 52% of respondents ascribing high influence to that effect. This can be explained by today's high professionalization level and the high share of wind power deployment in general. Many experts pointed to the fact that Community Wind once was the cradle of wind power deployment and introduced the technology to the market. In this regard, the once positive effect might have weakened over time.

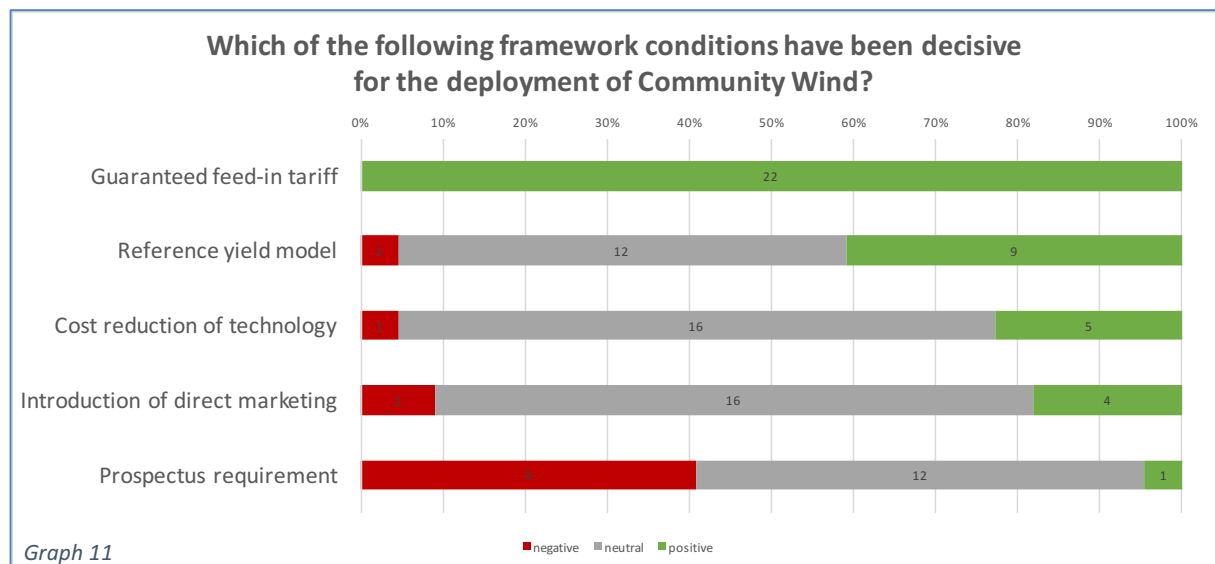
With 93 %, the third strongest influence of Community Wind was assigned to its effect on bringing about added value for the region. This opinion snapshot was also shared by the 9 of the 10 experts. One of the experts quoted a study, saying that one 2 MW turbine can create added value of 2,8 € million over a period of 20 years, and if the Community Wind model is applied, most of the added value remains in the region (Mühlenhoff 2010). Another expert said that Community Wind can be framed as a means, with added value as an end.

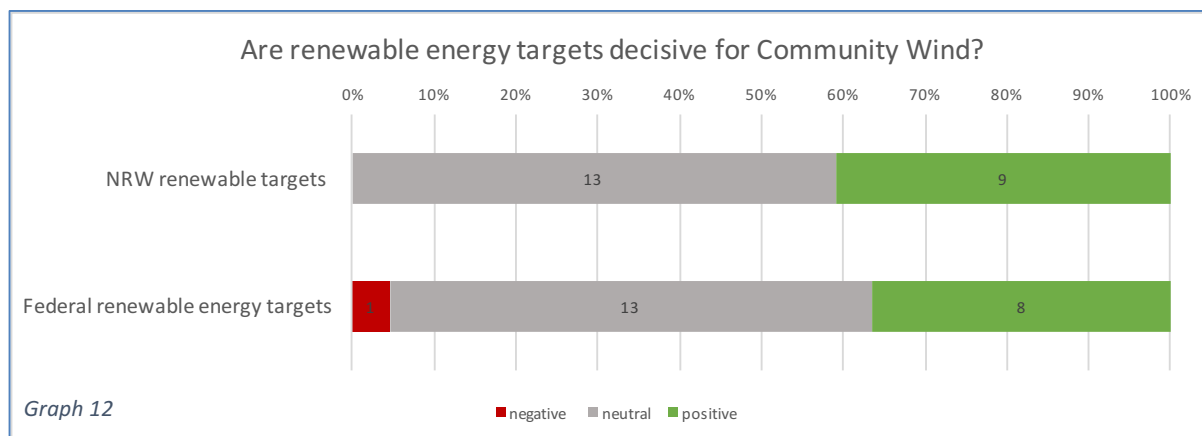
In contrast, Community Wind is not seen as a highly influencing factor for the creation and preservation of jobs, with 60 % of the respondents only ascribing medium influence to this effect.

3.3. Barriers and Drivers of Community Wind in NRW

In this subchapter, the focus will be set on the identified barriers and drivers of Community wind. Graph 11 gives an overview on the questionnaire results with regard to the overarching framework conditions for wind energy deployment in Germany. The results indicate that the guaranteed feed-in tariff is seen as the single most important regulatory framework condition for development of Community Wind. The whole study sample (22 online respondents and 10 experts) agreed concordantly on its positive influence on Community Wind.

In opinion of the experts, the feed-in tariff established safety of investments throughout the project lifetime of 20 years. From the perspective of Community Wind CEOs, once a project had been properly planned and all of the necessary permissions have been acquired, a project was seen home and dry. Additionally, the FIT is said to have sent a strong signal for banks willing to fund debt for Community Wind projects. In combination with the reference revenue model, which only 40 % of the survey sample consider to be positive, the concept of Community Wind was able to expand from a small number visionary projects in areas with very high wind speeds to a mainstream model of decentralized shared ownership.





However, the overarching regulatory frame of the Renewable Energy Sources Act, which comprises both of the above mentioned mechanisms, experienced frequent amendments since its enactment in 2000. In the expert interviews, project implementers mentioned that they always had to count on regulatory changes that could happen during the realization process. Negative comments on the reference revenue model were based on the fact, that the current EEG version does not include 70% or 60% locations, which are quite frequent throughout NRW. No significant effects have been attributed to the cost reduction of wind technology or the legal obligation for direct marketing, neither by the online sample nor by the experts.

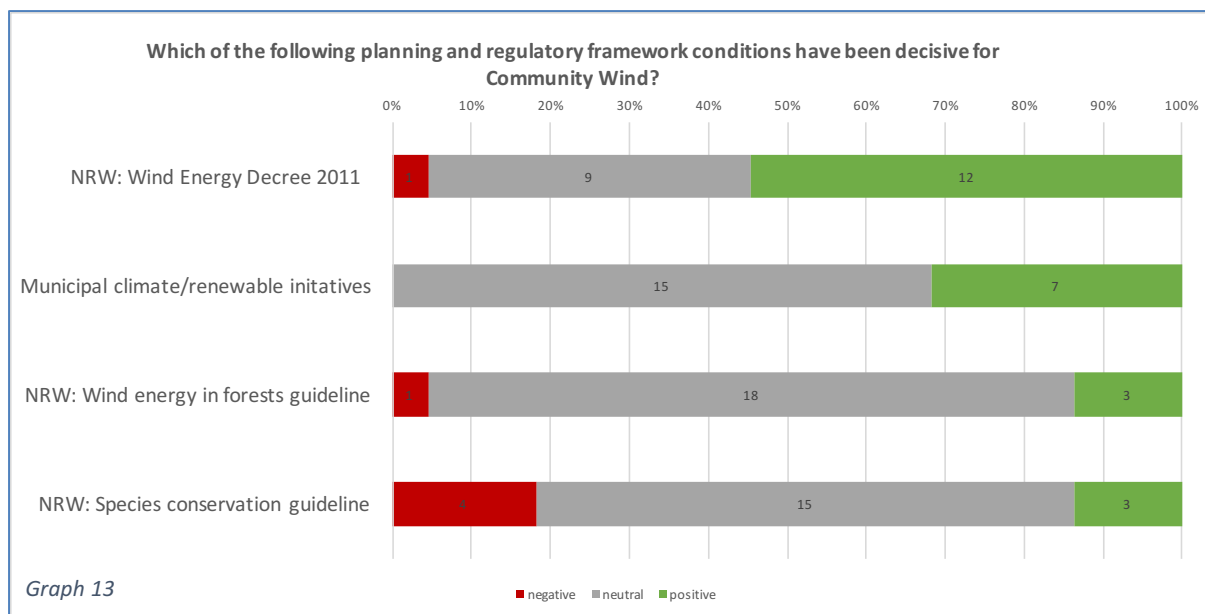
A barrier for Community Wind, at least from the perspective of community stakeholders working with closed-end funds, was attributed to the prospectus requirements (forecasting of revenues) introduced in 2009. 40% of the online questionnaire respondents evaluated prospectus requirements as an impeding and costly factor for Community Wind deployment. Three experts and project implementers questioned the general usefulness of prospectuses, as they only have to comply with formal rules, rather than being evaluated on the basis of their content. In addition, prospectus exemptions for wind farms organized as closed-end funds owned by less than 20 shareholders and large denominations are in conflict with the Community Wind model.

Renewable energy targets, both on federal and state level are not seen as decisive factors for Community Wind deployment (see Graph 12). With 41%,

the positive rating of the renewable energy targets of NRW were minimally higher than the ones for the German renewable energy targets. In the opinion of the experts, the NRW target to reach a 15% share of wind energy in the electricity portfolio is seen as an important political message, not more and not less. The targets are considered to be more useful, if they would be formalized in the new development plan of NRW, in order to be decisive for individual considerations of wind power deployment. Against the background of the current pace of wind power extension, the achievement of a 15% goal by 2020 was described to be rather unrealistic.

When looking at the assessment of respective regulatory and planning framework conditions in NRW (see Graph 13), it can be observed that most items have been considered as neutral for Community Wind. Only the NRW Wind Energy Decree in its 2011 version⁸ was clearly considered as a positive framework condition (57%). The experts explained the Wind Energy Decree provides a guideline to assist subordinate administrations in forming their decision for or against wind power deployment. The “verbal commitment” to the Community Power concept in one of the first paragraphs of the Decree was considered positive, but is not said to have had any influence on the basic work of Community Wind project implementers. No specific support measurements are put in place, hence project implementers get the feeling that they are left alone and that their work is only appreciated when they manage to realize a project. Also the upcoming amendment to the decree was not expected to bring about

⁸ The Wind Energy Decree in its 2015 version was not yet enacted/published at the time of the survey/interviews.

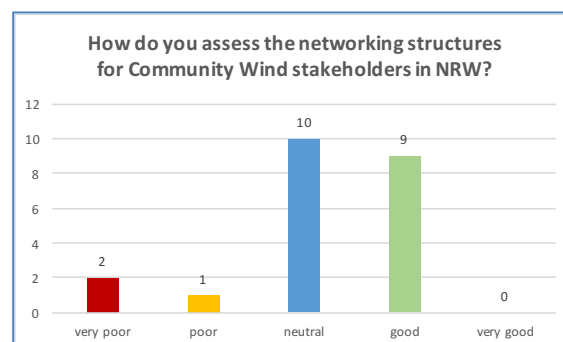


ground-breaking changes, but rather to add some details and relevant court decisions.

Besides the Wind Energy Decree, a guideline for wind energy in forests and for species and habitat protection and wind energy exists. Similar to the Wind Energy Decree, those guidelines serve as a reference for municipalities, project developers and licensing authorities dealing with wind power deployment in general. While the two guidelines are found on the bottom ranks of the evaluation – only 13 % consider them as positive for Community Wind, and in the case of the species and habitat guideline, the negative feed-back was even higher (17%) – the opinion of the interviewed experts deviated from those results.

Some experts pointed out that the impacts of those two documents, as well as the Wind Energy Decree, can only be measured against wind power deployment in general. This is because none of those documents specifically incentivises Community Wind developments. From the developers' perspective, they pointed out that the forest guideline in its essence is useful, but that many municipalities still treat forests as taboo-zones for wind energy deployment. With regard to species and habitat protection, the experts mentioned that the requirements and associated cost of related investigations and permissions are very high, hence they increase the financial burden on Community Wind projects. Because of this, many experts considered a simplification of procedures as important.

Municipal climate protection and renewable energy initiatives were rated as positive framework conditions by 35 % of the survey sample. The experts stated that wind energy friendly municipal councils and mayors are more and more interested in local acceptance of wind energy, which brings Community Wind onto their agendas; however, they are not entitled to legally enforce Community Wind. Nonetheless, their attitude can be a very decisive factor in favour of Community Wind (see also the example of Steinfurt county in Chapter 1.4.). In one case, a municipal climate initiative was considered to be main driver for the success of a Community Wind project, which previously failed. Participation by local politicians and municipalities in Community Wind projects was also considered an important factor for enhancing local acceptance. In addition, experts believe that municipal renewable energy targets enhance the sense of urgency to deploy RETs and serve as a driver for Community Wind.



Graph 14 shows how the participants of the online survey assessed the networking structures for Community Wind stakeholders in NRW. The majority (45 %) considered the networking structures as neutral, followed by 40 % who think that the existing structures are good. Three respondents were not satisfied with the existing networking opportunities and the response option “very good” was not chosen at all. When the experts were asked about existing networking structures, they mentioned regular get-togethers and web-based information platforms by the Energy Agency of NRW. In addition, the regional association of the German Wind Energy Association in NRW (BWE NRW) was mentioned. So far, none of the existing networking structures are specifically aimed at Community Wind stakeholders. The expert working with the Energy Agency of NRW, which also offers a free initial consultation for Community Wind stakeholders, when queried stated that a Community Power network will be launched in the beginning of 2016 (the initial event took place in January 2016). Furthermore, the regional cooperative association (RWGV) offers training-sessions and get-togethers for its members on a regular basis.

The remaining findings of this subchapter on drivers and barriers of Community Wind in NRW are solely based on the responses of the interviewed experts. While the commitment of the state government (at least for wind power deployment in general) can be depicted as a driver, all of the mentioned framework conditions can be categorised as barriers for Community Wind.

Political commitment of state government

The wind-friendly attitude of the current state government was seen as an important driver for wind energy deployment. However, some project implementers remarked on the slow pace of political decision-making processes in favour of wind energy; the trickle-down effect of state regulations to municipal administrations especially is perceived as being very slow. The state’s objective to foster 100 new energy cooperatives was seen as positive by two experts representing Community Wind cooperatives. However, they doubted that this objective will be achieved in the near future and they did not feel that support mechanisms for energy cooperatives have been institutionalized so far.

Competition with commercial project developers

The majority of experts expressed concerns on the very high level of land leases (up to 12 % of the annual revenues) promised to land owners by commercial wind project developers. Community Wind projects usually offer land leases up to 5 %, hence they cannot compete with larger players in the market, at least where land owners are only motivated by higher individual payments.

With regard to the general costs of Community Wind projects, the small Community Wind project implementers considered their projects to have a leaner cost structure in the development phase, as some of their activities are conducted on a voluntary basis and their projects are designed to generate profits in the operation phase. In addition, transparent and inclusive processes attributed to Community Wind are expected to lower costs arising from conflicts due to local resistance to a project. Nonetheless, the activities of Community Wind stakeholders are believed to have higher transaction costs when it comes to the activation of potential investors, raising debt capital and negotiating component prices.

Complexity of planning and professionalization

One of the major barriers for Community Wind deployment was attributed to the rising complexity of planning processes, which requires Community Wind stakeholders to professionalize their activities. In this regard, project implementers with smaller project portfolios pointed out that they are heavily dependent on knowledge and expertise, which makes independent project development very resource intensive. One possible option to acquire knowledge was attributed to good networking structures and interpersonal relations between Community Wind project implementers and facilitators who have already been successful. Even though independent bottom-up development of Community Wind projects was possible in the past, many experts now think that without professional assistance and supervision, as well as committed and enduring individuals who steer the project through the development phase, Community Wind in its classic conception won’t be possible in the future.

Another aspect related to lacking professionalization is attributed to the low level of agency and lobbying of Community Wind stakeholders. In the opinion of one expert, the elusive character of Community Wind and the lack of financial resources, as well as the lack of time for additional voluntary activities, are considered the cause of this problem. Especially on the federal level, the lack of advocacy is deemed a problem as Community Wind stakeholders are expected to lose out against bigger, resource-strong players in the wind market.

Conflicts with wind energy opponents and species conservation associations

In general, Community Wind projects are said to contribute significantly to the local acceptance of wind turbine landmarks and cause lower levels of resistance by citizens' initiatives, but Community Wind is not considered a panacea for any kind of conflict. However, in case a conflict arises during the development phase, the experts considered Community Wind projects to have an advantage over external developers as Community Wind project implementers are usually well connected and approachable on the local level. Furthermore, Community Wind project implementers mentioned that they deployed the following strategies to prevent conflicts from arising in the first place: transparency through fact sheets and consultations; direct financial contributions through participation and land lease systems, including adjoining properties; and indirect financial contributions through local foundations to maintain rural infrastructure. When it comes to local conflicts, the media is considered to play an important role in mitigating local resistance through balanced and fact-based coverage.

One major driver of conflicts was attributed to the activities of some nature conservation associations. Many experts pointed to the fundamental opposition within this stakeholder group when it comes to wind project developments, no matter whether the projects are realized as Community Wind or commercial wind farms. The example of the Hilbeck Community Wind farm was mentioned by every expert. In this case, an already commissioned wind project was sued in court and had to shut down its operation because a threatened species was spotted in its vicinity, even though the project develop-

ers complied with the regulations set by the municipality. This special case was considered to have had strong signal effects for Community Wind stakeholders who might be deterred by the court's decision, as they could fear something similar to happen to their projects.

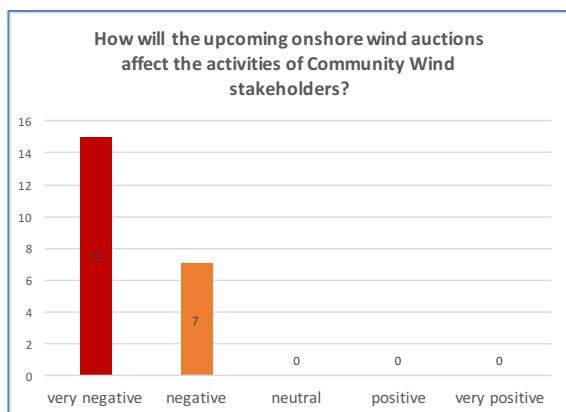
Societal backing of the Energiewende

Another frequently mentioned factor, claimed to be an impediment for the deployment of Community Wind, was the general decline of societal backing for Community Wind, renewable energy and the Energiewende in general. While political support and societal backing of Community Wind was very strong in the aftermath of the Fukushima incident in 2011, today the general interest is declining again. One expert said that the longer Fukushima lies in the past, the bigger the criticism of wind energy. Another expert remarked that acceptance levels decrease and "Not-In-My-Backyard" mentalities are on the rise, fostered by the media coverage on renewables that focuses on the issue of rising electricity prices.

However, during the interviews, three respondents expressed the feeling that the (at that time still upcoming) COP21 meeting of the United Nations Framework Convention on Climate Change Paris had the potential to set renewables and Community Wind back on the agenda. One expert was of the opinion that commitment towards renewables on an international level can have a strong influence on the ground as people check what is being done in other countries, and are reluctant to change their attitude if nobody else does.

3.4. Community Wind and Competitive Auctioning – Opinions and Expectations

The following subchapter will deal with the opinions and expectations of Community Wind stakeholders on the upcoming competitive auction scheme. Up until the time of the interviews and the online survey, the BMWi had only published its first version of key points on auctions for onshore wind energy. This initial version did not yet include a decision on the de-minimis rule or the one-tier reference revenue model (see latest version in Chapter 1.3. and Annex 1), though other key points were included in the first version.



Graph 15

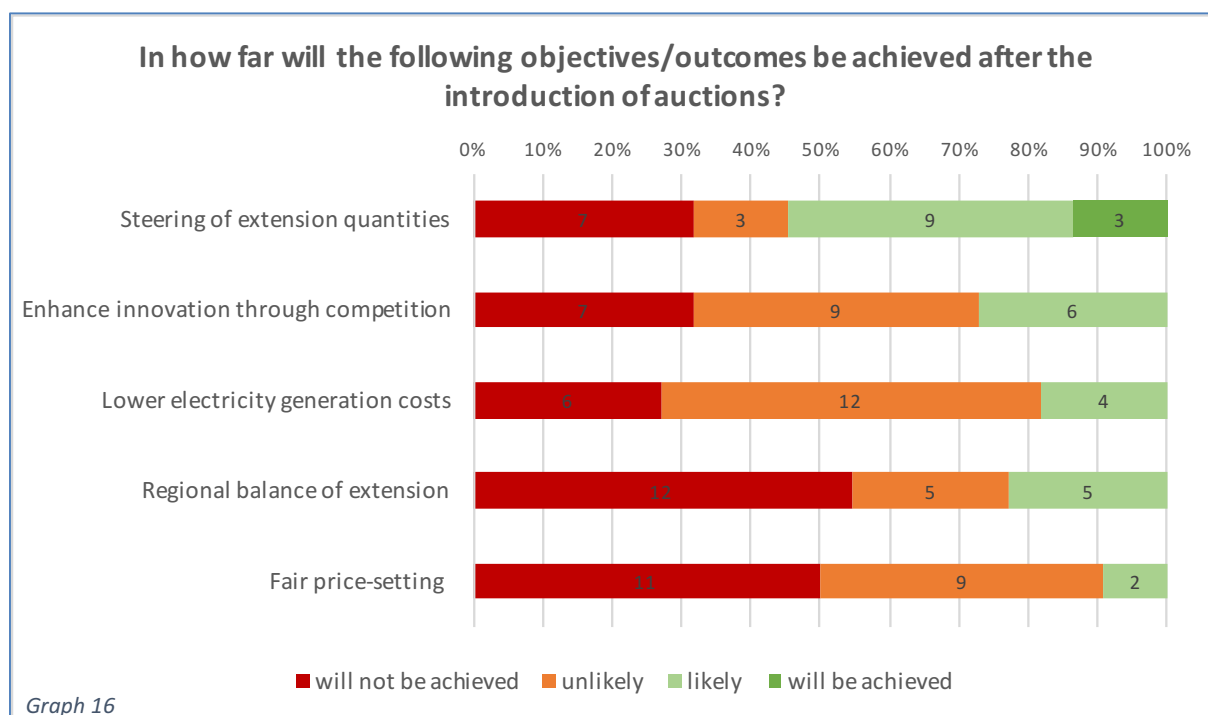
The results of the online survey (Graph 15) show a very clear picture. All of the respondents assessed the upcoming auctions as being negative, with 68 % of the respondents expecting “very negative” impacts on the activities of Community Wind stakeholders. This bleak outlook was also shared by most of the queried experts. In particular, the share of independent bottom-up Community Wind projects is expected to drop significantly, and the experts witnessed that small players are already pulling out of project development. The expert working with the Energy Agency indicated that many Community Wind stakeholders who want to initiate new projects hesitate to take action.

All experts, who were in the process of project development spoke of a “final spurt” with regard to Community Wind projects. This means that most of

the project implementers aim for a permission before the end of 2016 in order to receive the guaranteed fee-in tariff and not to take part in the upcoming auctions. However, by the time of the expert interviews, there was still hope for a properly designed final version of the auctioning scheme, addressing the needs of Community Wind stakeholders, especially as the BMWi stated the preservation of the currently high share of the diversity of players as one of their key objectives.

Graph 16 shows the online survey results on the question in how far the posited positive outcomes, which proponents often relate to auctions, are expected to be achieved. Again, the general picture looks relatively bleak from the perspective of Community Wind stakeholders. The only likely outcome seems to be the steering of extension quantities with a slight majority of 53%, which also comprises the three respondents, who think that this outcome will be achieved. In the opinion of the experts, the “steering” of extension targets was already possible with the feed-in mechanism as the remuneration rates were calculated against extension rates.

In contrast to the steering of extension qualities, only 22% of the respondents think it is likely that the auctions can cater for a regionally balanced extension of wind power. However, some experts framed the regional balance of wind energy extension as a very pressing issue, as in some wind intensive regions in the North of Germany wind producers have



Graph 16

to be curtailed, while remuneration rates for moderate wind regions with stable distribution networks (like in NRW) do not enable viable projects. Against this background, some experts pointed to the usefulness of one-tier reference revenue model including 60 % locations, which by that time was still under development and not yet integrated in the key points.

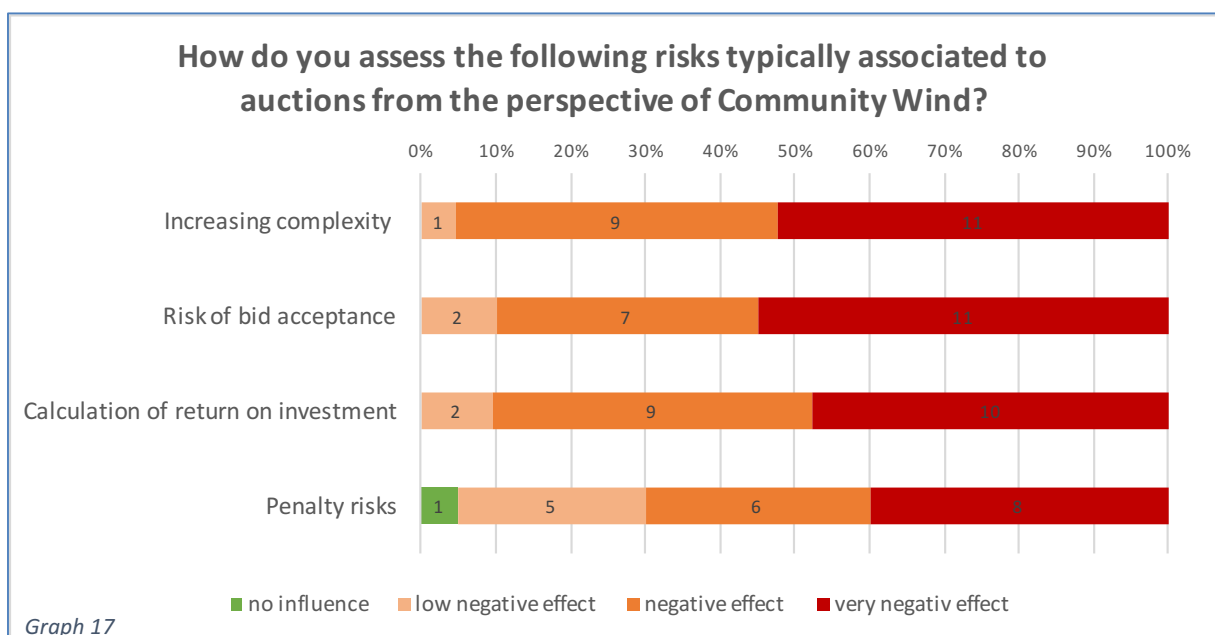
The majority of the respondents do not share the assumption that auctions will drive innovations. 73 % assume that auctions won't create a conducive environment for innovation, while the remaining 27% considers innovation through competition as likely. One expert pointed out that the upcoming auctions will put enormous time pressure on wind project developers as they have to fear penalties if the project is not realized in time. This adds to the pressure of designing a project as cheaply as possible. Those two factors were seen as a major impediment for Community Wind project implementers, to work with innovative technologies that are not yet business-as-usual components, and to try out process innovations with regard to integrative planning. This is seen as a major step-back, because the expert considered that in the past, Community Wind was able to introduce innovations to mainstream project development.

The likelihood of auctions bringing about a reduction of electricity production costs was rated as unlikely by 82 % of the respondents, including 27 % of respondents who think that the reduction will not

be achieved at all. In the same light, the respondents are very sceptical about the postulate that attributes "fair price-setting" mechanisms to auctions. 50 % of the respondents don't think that auctions will bring about "fair" prices for wind power projects; 40 % evaluate this potential outcome as unlikely. Also from the experts' point of view, prices are not expected to drop in the long term. One respondent predicts prices to drop during the first auction rounds, but to rise again when strategic bidding is practiced and risk premiums are added to the bids, also pointing to some international experiences such as that of the United Kingdom. Another expert mentioned that he expects the legislator to introduce a maximum price, which would only allow for price reductions or to adjust prices by changing extension quantities, which to the expert's understanding cannot be claimed as fair price-setting through market mechanisms.

Graph 17 summarizes the assessment of expected disadvantages for Community Wind under the upcoming auctions. In general, all the expected effects which have been included in the questionnaire are rated as negative; only one respondent rated the penalty risks to have no influence on the activities of Community Wind stakeholders.

The rising (bureaucratic) complexity of project development that goes along with auctioning schemes is seen as a major impediment for Community Wind projects. 52% of the respondents expect this complexity to have very negative effects; the remainder expect negative or low negative effects. All queried



experts expect that “first-time” Community Wind implementers, who independently develop their projects, face huge difficulties to being successful in auctions. Only Community Wind projects of experienced implementers are expected to have the resources and the know-how to be competitive with larger players in the market. This is also backed by the prediction that single Community Wind projects and inexperienced implementers won’t be able to practice strategic bidding, which leads to a competitive disadvantage of this group.

The possibility of not winning a bid is seen as a major risk for Community Wind projects, with 55% of the respondents considering this risk to have very negative effects. The experts explained that Community Wind projects generally do not have higher costs than commercial wind projects, hence they are able to compete with larger project developers, but this level playing field is said to change once auctions will be introduced. Given the risk of not being successful, Community Wind implementers may not be in a position to acquire venture capital for required pre-development activities and as a result may withdraw from the market. In most cases, Community Wind implementers with single projects are not seen as being able to distribute financial losses in case of failing in the auction.

With a guaranteed feed-in tariff, Community Wind implementers can easily calculate the return of investment for potential shareholders, members or investors. Auctions make this process more difficult, as the final remuneration that a project is expected to receive cannot easily be predicted in advance. 48% of the respondents consider this to have a very negative effect on Community Wind development and the remaining respondents expect negative (42 %) or low negative impacts (10%). One of the experts pointed out that an insecure rate of return can prolong the acquisition of equity capital, delay the realization process of a project, hence the penalty risk is enhanced (see next paragraph). In addition, the prospectus requirement poses another challenge for Community Wind implementers working with closed-end funds, hence the return on investment is nearly impossible to calculate. Furthermore, unsuccessful bids may have to be recalculated for being able to participate in future bidding rounds,

which entails additional costs attributed to prospectus requirements.

Lastly, penalty risks are adding up to the list of impediments for Community Wind projects. 40% of the respondents considered penalty risks to have very negative effects for Community Wind, only one respondent did not consider penalty risks to influence Community Wind projects, and the remaining 55% share the categories “negative effects” and “low negative effects”. The experts considered bid bonds as an additional barrier for small project developers and questioned the usefulness of bid bonds (30’000 € per MW) as the capital, which is put in the pre-development of a project (estimated at 100’000 – 300’000 € per turbine) can already serve as a proof for the willingness of a developer to realize a project. An option to evade this negative effect on Community Wind projects is seen in the possibility of requiring a safety deposit only in case of an accepted bid. In this case, banks are believed to be less averse in granting the required amount as additional debt capital.

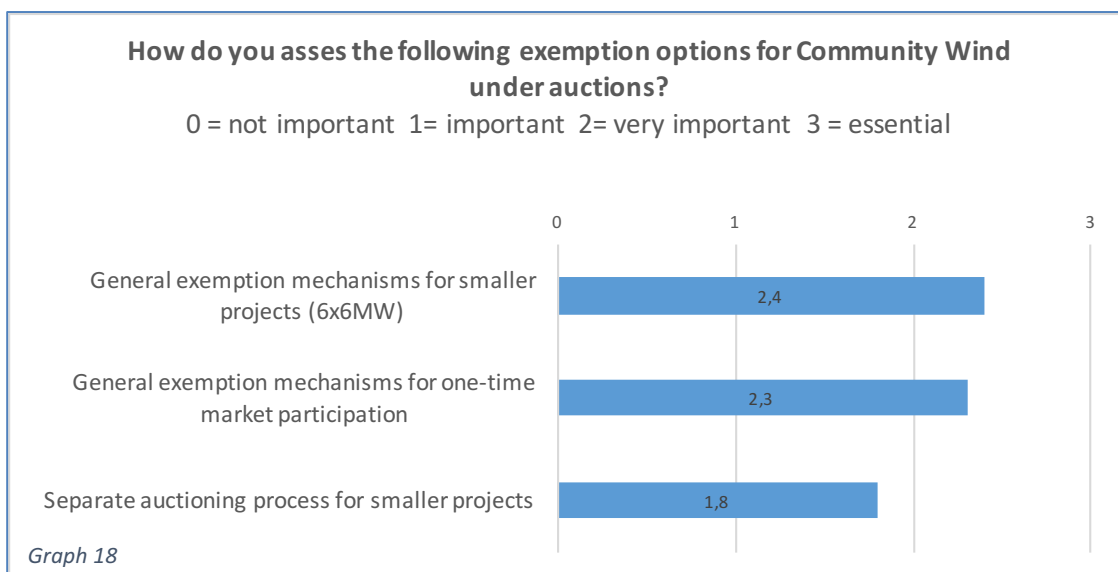
Based on the previous findings the following risk catalogue for Community Wind projects can be derived:

Risk catalogue of Community Wind projects

- wind resource assessment (yield risk)
- species and habitat assessments
- political consent with regard to land-use plan
- emission control approval
- complaint proceedings (ex-ante/ex-post project approval)

Additional risks under auctions

- risk of bid acceptance
- financial feasibility (equity, debt and venture capital acquisition)
- penalty risks



The de-minimis rule, included in the Energy and Environment State Aid Guidelines by the European Union (see Chapter 1.3.), generally allows for the exemption of small renewable energy projects from auctions. According to the EU Commissioner for competition policy the largest wind farm that could be built without taking part in auctions would be no larger than 18 megawatts. By the time the online survey and the expert interviews were conducted, several de-minimis designs and eligibility criteria were discussed and fed into the official consultation process. As a properly adapted de-minimis rule was expected to be seen as positive from the perspective of Community wind, three possible options were proposed to the survey participants.

Graph 18 shows the average assessment by the respondents on a scale ranging from 0 (option is seen as not important for Community Wind) to 3 (option is essential for Community Wind). The first option of a general exemption mechanism for smaller projects (with a maximum amount of 6 turbines x 6 MW) was rated with a mean of 2,4, indicating that this de-minimis option is considered as feasible to cater for the needs of Community Wind farms. However, experts pointed out that an application of the 6x6 threshold could cause two questionable effects. On the one hand, it may confine Community Wind stakeholders to realize only small projects. On the other hand, larger wind players could be incentivised to develop small projects. A more general problem was attributed to the fact that the current market share of wind farms with less than five turbines is more than 60%, hence the majority of new

wind farms is expected to fall under the 6x6 threshold.

The second option, a general exemption mechanism for a one-time market participation, was also rated as very important (average value of 2,3). This option was seen as favourable by some of the experts, as independently developed bottom-up Community Wind farms are expected to realize only one project. However, experts doubted that such a design can be easily put into practice, and pointed to the difficulties of defining “one-time market participation”.

Lastly, a separate auctioning mechanism only for smaller projects was proposed. This option yielded an average of 1,8 which is less than the other options, but is still seen as a very important option for Community Wind projects. None of the experts explicitly mentioned or commented this kind of option when asked about possible de-minimis designs. One expert proposed an exemption mechanism based on the criterion that a minimum of 75% of the shareholders come from the same postal code area in which the wind farm is located. This mechanism would ensure that the major share of added value remains in the region of deployment.

Many Community Wind experts pointed to the general problem of exemption mechanisms. In case the exempted projects would receive the remuneration based on the current EEG rates, by the end of 2018 they would only receive 7,68 euro cent per kWh.

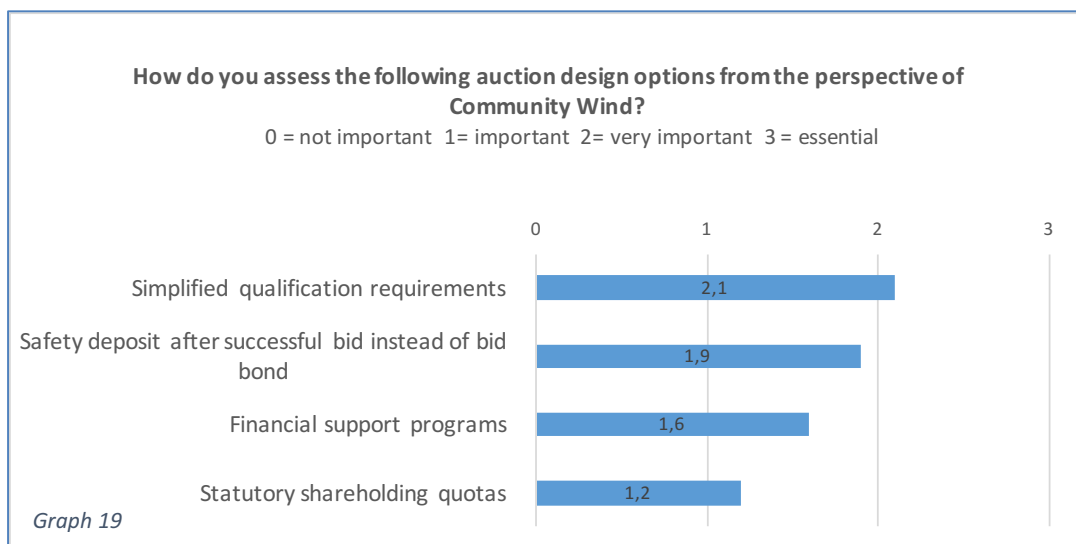
Against this background, it was suggested to exclude Community Wind projects from the main auctioning process and to automatically grant them a remuneration based on the average price of the latest three auctions. As mentioned in Chapter 1.3, the BMWi decided not to include an exemption for small players based on the de-minimis rule as of the final version of key points.

Besides exemption mechanisms, other possible auction designs reflecting the competitive disadvantage of Community Wind farms exist. Four potential design options have been included in the online questionnaire. The option, which ranked highest with an average value of 2,1 were simplified qualification requirements for Community Wind projects. The answer option included three components: lower bid bonds, lower penalty rates and longer realization periods. Furthermore, simplified qualification requirements could also include a participation in bid rounds without having acquired an approval of the project under the Federal Emission Control Act (BImSchG approval). Another option connected to simplified requirements for Community Wind projects could be seen in the introduction of a safety deposit, which would be due only after a project was successful in the bidding process. This safety deposit would replace the currently proposed bid bond, which has to be paid when the bid is entered. That particular option was seen as a pertinent solution to mitigate penalty risks for Community Wind projects and was also mentioned by some of the experts and the survey respondents considered this design option as very important (1,9). Against the background of those results, the

BMWi's decision to lower the qualification requirements (no BImSchG approval required and a split of the bid bond) for Community Wind projects in the latest version of proposed key points can be considered as an important but still insufficient first step into the direction of a more level playing field between the competing market players.

Financial support programs for the development phase of Community Wind projects yielded an average of 1,6, hence considered to be somewhere between important and very important. So far, Community Wind projects are said to have no problems when it comes to acquiring equity, debt or venture capital. Experts indicated that in general there is a huge demand from potential Community Wind shareholders to invest in projects with single-digit rates of return and (mostly local) banks willing to provide for debt capital. However, the needed venture capital for pre-development of wind projects has risen over the last years and now, the restructuring towards auctions is expected to introduce high bid acceptance risks. As a result, small Community Wind implementers are expected to have difficulties in acquiring capital for their projects, especially venture capital. So far, there are no venture capital support schemes targeting Community Wind projects in NRW. However, experts were aware that the state bank of NRW (NRW.Bank) is considering the introduction of a venture capital scheme aimed at Community Wind, which was considered positive by the experts.

Lastly, the option of statutory shareholding quotas for local residents for all auction participants yielded an average value of 1,2, making this option



the least attractive (but still “important”) one in the proposed catalogue. This result was also reflected by the experts’ opinion who expressed that shareholding quotas are considered to be difficult to enact and may be conflicting with regulations, both from the national and the European level. Denmark introduced a shareholding quota of 20% for local residents for onshore wind developments in 2009 and the state government of Mecklenburg-Western Pomerania plans to replicate this model, currently waiting for the state parliament to pass the proposed law in March 2016. The queried Community Wind experts considered the initiative by the respective policy-makers as positive, however, they also expressed that legally binding minimum shareholding quotas only scratch on the surface of the problem and are not expected to mitigate the competitive disadvantages of Community Wind projects in auctioning schemes.

Chances for community wind project in auctions

The interviews method also enabled the researcher to ask Community Wind stakeholders for any positive aspects they relate to auctions. The majority of experts mentioned that in the long term, auctions may induce higher remuneration rates for produced electricity than the currently determined feed-in tariff rates. However, it was doubted that the legislator would accept such a price development to happen (the recently introduced minimum price validates this assumption by the experts). Furthermore, some experts pointed to the possibility that very high land leases could disappear and excess returns might be reduced, which in turn could enhance the competitiveness of Community Wind projects. There was a consensus between most of the experts that a proper auction design, which takes into account the specific challenges of Community Wind and, furthermore, values the specific

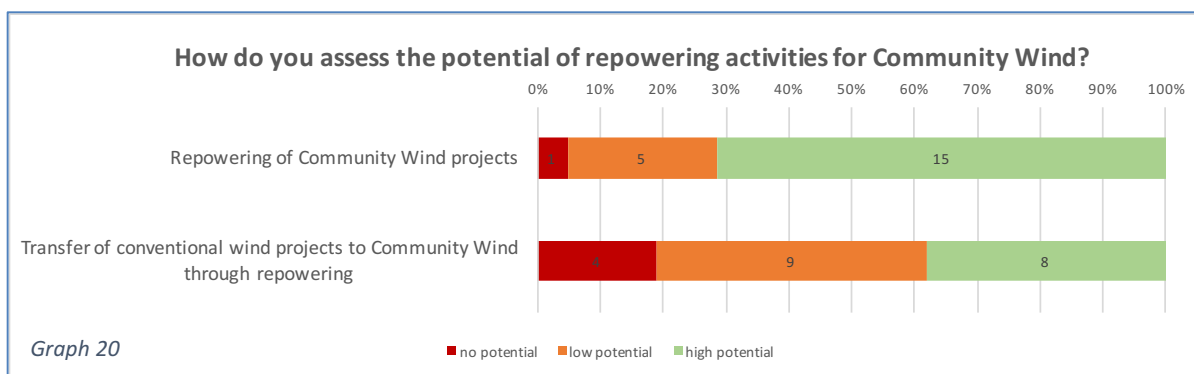
beneficial effects those kind of projects bring about, might in theory be suitable to maintain the current level of diversity of actors, however, such system would need to take into account many complex factors.

3.5. The Future of Community Wind

The last part of the survey and the expert interviews was designed to identify future business models and ways to professionalize the activities of Community Wind. The online questionnaire included three thematic blocks (repowering activities, future activity catalogue and the usefulness of networks, information platforms and associations), while the interview guideline was structured more openly and also aimed to identify conducive framework conditions for future activities by Community Wind stakeholders.

Besides wind power extension through newly added capacity, repowering of wind farms is crucial to meet the ambitious wind power targets of NRW. Graph 20 shows the assessment of the survey respondents with regard to future repowering activities for Community Wind projects. While repowering of already existing Community Wind projects was considered to have a high potential (71 %), the option of transforming a “commercial” wind farm into a Community Wind farm through a repowering process was considered to have less potential. 19% of the respondents claimed that this option has no potential and 43% attributing a low potential.

To the opinion of the experts, repowering processes are said to be very resource intensive, especially when land lease structures need to be rearranged. Usually, smaller Community Wind formations are considered to lack know-how and the financial resources to perform repowering activities without the help of professional project developers. In con-



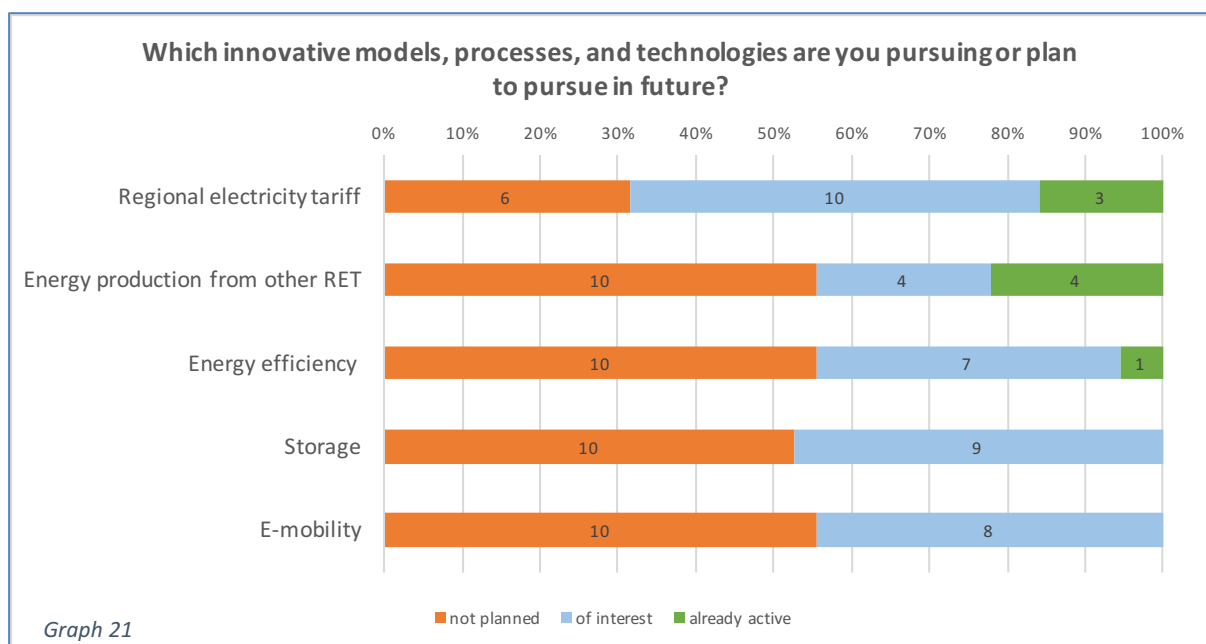
trast, more experienced Community Wind implementers with larger project portfolios already practice repowering. One expert was involved in a repowering process that resulted in the decommissioning of seventeen turbines, which were replaced by nine turbines with a higher capacity. The negotiations and rearrangement of land lease structures related to this project took around three years.

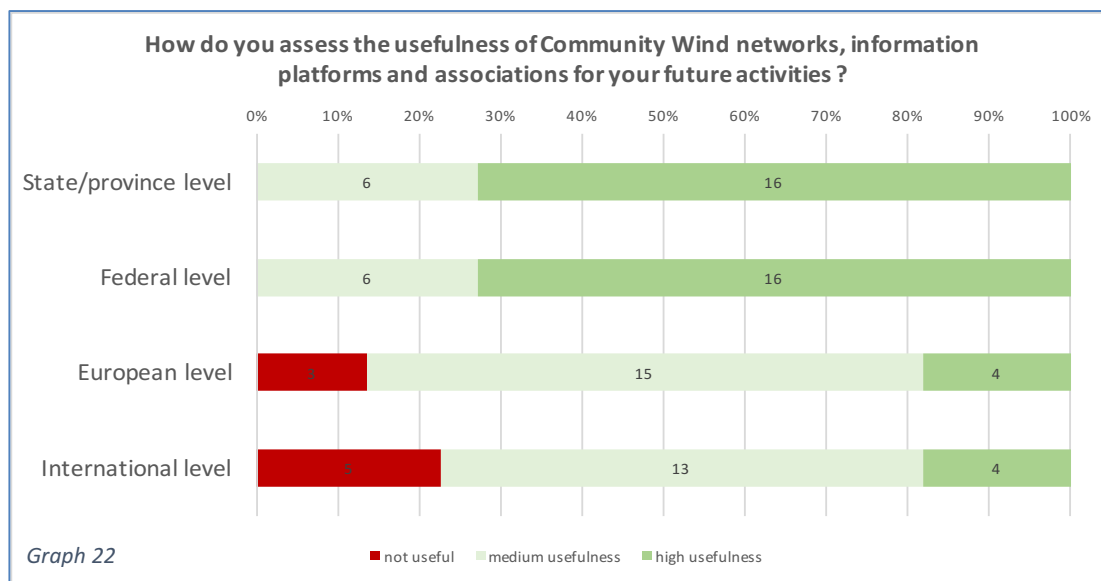
The expert working with the regional cooperative association explained that until now, no Community Wind cooperative in NRW repowered a project, but observed that there is a general interest on repowering activities in the future. This observation was shared by the expert working with the EnergieAgentur.NRW, which also offers free initial consultation of Community Wind stakeholders interested in repowering. Some experts considered the transformation of a “commercial” wind farm into a community wind farm to be an interesting option for the future. However, most of the experts pointed out that the current framework conditions as well as the upcoming auctions are not expected to foster such an option.

Graph 21 summarizes the results of the online surveys’ question block on innovative activities or business lines beside the basal realization and operation of Community Wind farms. The respondents were able to indicate if they are already active in the respective line of business or plan to do so in the fu-

ture. Lastly, the respondents were also able to indicate, whether the proposed activities are not on the future agenda of their Community Wind projects.

The provision of electricity tariffs specifically for local/regional customers ranks the top position of the proposed list. 53% of the respondents are interested in regional marketing of their produced electricity and three of the respondents already implemented such a tariff. Only 32% of the respondents do not consider regional electricity tariffs as a future business line. To the opinion of the experts, local/regional electricity tariffs present the most attractive business opportunity for Community Wind projects at the moment. One expert indicated that in case conducive regulatory framework conditions for regional electricity tariffs would exist, every single Community Wind project would include such tariffs in its portfolio. Moreover, local tariffs are considered to lead to higher acceptance levels as local people who do not directly participate in the project could have the chance to benefit from lower electricity prices. However, after the abolition of the green electricity privilege (Grünstromprivileg) and the introduction of obligatory direct marketing in 2014, Community Wind projects face regulatory barriers in setting up regional electricity tariffs. This could explain why 32 % of the respondents do not plan to implement regional electricity tariffs in the future.





Energy production by other RETs ranked second on the list as four respondents (22%) indicated that they do already have other renewables than wind energy in their energy production portfolios. On the contrary, the majority of respondents (56%) pointed out that they are not planning to widen their portfolio. The remainder of (22%) still shows interest in other RETs. This rather bleak outlook for more versatile RET portfolios of Community Wind projects was also shared by the experts, who above all considered the remuneration cutbacks and the already introduced auctions for solar energy to be a reasons for their negative assessment.

The three answer categories energy storage, e-mobility and energy efficiency all received similar results with the exception that one respondent already claimed to be active in the latter category. There is a relatively even split of respondents considering storage (47%), efficiency (39%) and mobility (44%) as future business lines of interest and those who do not plan to be active in those business lines. In the opinion of the experts, all of the above mentioned subsectors are pertinent for the targeted energy system based on RETs and therefore present attractive opportunities for Community Wind. However, the level of required professionalization as well as the lack of conducive framework conditions or financial support mechanisms aimed at Community Wind stakeholders are expected to deter this group from entering those markets. Energy efficiency and e-mobility were framed as branches that are expected to have a huge disseminator effect of the “prosumer” concept once suc-

cessfully integrated in the wider energy system. According to the experts, energy storage is still perceived as a technology that requires very high upfront investments which Community Wind implementers are not yet able to lay out. However, it was mentioned that energy storage should go hand in hand with the extension of the renewables and that Community Wind implementers could serve as pathfinders for decentralized energy storage deployment.

One expert mentioned that small wind (not included in the online survey) constitutes an interesting technology for smaller market players and Community Wind projects. However, the comparatively high electricity generation costs of small wind are considered to pose a major impediment in the diffusion and deployment of this technology, both in NRW and in Germany.

It can be assumed that networks, information platforms and associations serve an important function with respect to diffusion of innovations, the establishment of new business lines and professionalization. Based on this assumption, a question on the usefulness of those institutions with different spatial scales was included in the online survey. The results (see Graph 22) show a rather clear tendency. The larger the operational scope of the institution, the less useful they are perceived to be for the future activities of Community Wind stakeholders in NRW. Institutions on the state and federal level are considered to be of high usefulness (both with 73%) for future activities of the respondents, while the majority of respondents considered Institutions

focusing on the European level (73%) and international level (60%) to be of medium usefulness.

This trend can be explained against the following findings of the expert interviews. The activities and interests of Community Wind stakeholders are considered to be highly dependent on specific domestic framework conditions, hence experiences from other countries are generally seen as less relevant for Community Wind stakeholders. Institutions, which focus their work on the federal and state level (in this case NRW) are seen as very important as they can provide networking opportunities and assist in questions on the legal framework conditions, hence lowering the transaction costs for Community Wind stakeholders. Even though the experts shared the opinion that European and international Community Wind organisations are considered to be less useful than their counterparts on national and sub-national level, their importance for the global dissemination of the Community Wind concept, best practices and innovative business models was highlighted by the experts.

Furthermore, associations operating on the state or the federal level are considered to be important as they are able to influence political decision-making processes and to push the needs Community Wind stakeholders on the political agenda. However, some experts were concerned about the fact that organisations representing the wind sector are mostly dominated by larger players whose interests are not always in line with those of Community Wind stakeholders. One respondent mentioned that regional agricultural associations could play an important role in enhancing Community Wind deployment, as they have an outreach effect on their members, which constitute a large share of landowners.

Community Wind implementers with small portfolios pointed out, that their success was rather based on local inter-personal networks than on their involvement in larger institutions, as the latter often goes along with higher transaction costs. In this regard, also showcase examples of Community Wind were considered to serve an important function for the diffusion of innovative business models. Energy cooperatives are considered to be primarily interested in changing the energy system through local

initiatives with a strong focus on the regional identity. As a result, members of energy cooperatives usually limit their focus on one specific geographical area.

4. Conclusion

The research revealed that Community Wind remains, to a certain degree, elusive concept or business model that is not legally nor politically defined in NRW (nor in Germany or the EU). However, Community Wind is regarded as a form of wind energy deployment which entails many beneficial social and economic effects, most importantly it is seen as means of enhancing local acceptance and local added value. The NRW experts framing of Community Wind is in most of the cases coinciding with the WWEA Community Wind definition, which points to the latter's usefulness as a basis for a potentially binding definition. Until now, a legal definition of Community Wind in Germany was not needed as the guaranteed feed-in tariff does not put Community Wind at a disadvantage. However, with the upcoming auctions, the relatively level playing field for commercial developers and Community Wind will be abolished.

To the opinion of the queried experts, the single most important driver of Community Wind can be attributed to the guaranteed feed-in tariff introduced on the federal level by the Renewable Energy Sources Act (EEG) in 2000. Other drivers comprise the current wind-energy-friendly state government of NRW, regional/municipal renewable energy initiatives, voluntary Community Wind standards as well as regulatory guidelines aiming on the simplification of planning/permission procedures, even though the latter are not primarily addressed at Community Wind projects. On the other hand, rising complexity, high land leases offered by commercial wind developers, the opposition by nature conservation associations and a general decline of societal interest in RETs are said to hinder the deployment of Community Wind. In addition, the upcoming auctions for onshore wind are expected to entail tremendous impediments for Community Wind deployment in NRW and Germany. The current auction design is said to put Community Wind projects at a strong competitive disadvantage, thus independent bottom-up development of Community Wind projects will no longer be possible.

The recently proposed simplified qualification requirements for Community Wind projects (as of February 2016) can be considered as a first but insufficient step into the right direction to level the playing field for Community Wind in the upcoming auctioning scheme. However, these simplified requirements only resolve the problem of entering the auctions in the first place and Community Wind projects still have to compete with those of experienced market players with a higher competitive advantage.

A catalogue of attractive future business lines and additional market activities for Community Wind projects includes inter alia repowering activities, regional electricity tariffs, storage, e-mobility and energy efficiency. However, the current level of Community Wind professionalization as well as the changing regulatory framework conditions do not allow for a broad based diffusion of those business lines, except for some trailblazer projects of experienced Community Wind implementers. Community Wind networks, information platform and associations are considered to be crucial mediums for the diffusion of the Community Wind concepts and the identified innovative business lines, but so far, their level of organisation and political clout is negligible compared to those institutions representing large, commercially oriented wind project developers.

In summary, Community Wind in NRW and Germany is at cross-roads. On the one hand, it holds vast potentials for the energy transition from a carbon-based (and to a lesser degree nuclear) energy regime towards a democratic, decentralised, emission-free, in other words: truly sustainable energy system. Moreover, it brings high levels of much needed acceptance and contributes to local added value. On the other hand, the upcoming auctions are expected to put Community Wind at a strong disadvantage. As a result, the externalization of wind power “acceptance costs” could have drastic effects on the outcome of the German *Energiewende*, or as one expert put it:

“The Energiewende wont be successful without Community Wind projects. Wind energy can only serve as the mainstay of the future renewable energy system, if its deployment is accepted”

With regard to the international level, it may happen (and can already be observed in some areas)

that the German decision to drop FITs and to introduce auctions for RETs will again send strong copycat signals (like the FIT introduction) to other countries. Therefore, a German auctioning design which caters for the needs of Community Wind could also have positive effects on the dissemination of Community Wind on a global scale, given that other countries decide to adopt policies of a country usually referred to as a trailblazer of RET deployment.

The study at hand aimed to give a broad overview of Community Wind in NRW by looking in the past, the present and the future of this particular concept from an experts’ perspective. This rather comprehensive approach did not always allow for a detailed causal analysis on single drivers and barriers of Community Wind. However, the results revealed the bigger picture of Community Wind in NRW, hence they can serve as a strong foundation for upcoming in-depth analysis in the realm of Community Wind and Community Power in general.

Further research activities in the realm of Community Wind in NRW and Germany should also include longitudinal study designs to explore how single projects or Community Wind at large develops over time, especially with a focus on the expected auctions. This should also include a thorough stocktaking of already existing community wind projects, in order to be able to observe the share of Community Wind projects in the diversity of players. Moreover, it is important to reveal how policy measures could be modified to enhance higher shares of citizen participation in fields that are necessary for a successful transition of the North-Rhine Westphalian and the German energy sector. Finally, analysing Community Wind in other countries would certainly also provide important findings. Those should cover the appraisal of business models in different countries, research on the interaction of different political and institutional frameworks aiming at the diffusion of Community Wind as well as research on the transferability of existing business models to countries where citizens are not active in Community Wind.

The study closes with a quote by a Community Wind expert that points towards the importance of “prosuming” energy:

“Only when we actually live the Energiewende, we are able to understand it.”

5. Policy recommendations

5.1. Policy recommendations municipal-level

- Make community wind a basic part of the local energy programme, as part of a local 100 % renewable energy strategy
- Foster and incentivise the set-up of (voluntary) municipal guidelines for community wind
- Utilize existing platforms for conflict mediation

5.2. Policy recommendations state-level

- Set-up of financial and conceptual support mechanisms for Community Wind projects for the high-risk phase
- Elaborate commitment towards the Community Wind model, and Community Power in general
- Support programs for municipal climate protection/renewable energy initiatives
- Facilitate round tables for conflict resolution between wind power developers and representatives of species conservation
- Continue commitment with regard to an appropriate remuneration system design

5.3. Policy recommendations federal-level

- Set-up a sound remuneration system for onshore wind which does not put a disadvantage on Community Wind projects
- Design of electricity market that allows Community Power projects to market their electricity regionally
- Increasing the annual extension rate of onshore wind energy from now 2.000 MW to 4.400 MW
- Support mechanisms for holistic RET approaches including E-mobility, energy efficiency and climate adaptation

5.4. Recommendations for further research

- Longitudinal studies on Community Power and Community Wind
- Research on the financial and organisational needs during the high-risk phase
- Research on municipal guidelines and climate/renewable energy initiatives
- Stocktaking of primary data on Community Wind and public communication of data, especially of projects set up as closed end funds

Section B: Summary WWEA Community Wind Symposium 2016



WWEA President Peter Rae

On 26 January 2016 more than 110 Community Power experts and practitioners from 20 countries of six continents joined the first international Community Wind symposium (“Tailwind and Headwind for Community Power” – Regional and Global Community Wind Perspectives”) in Bonn, Germany, hosted by WWEA and LEE NRW. The guests were welcomed by Peter Rae (WWEA President) and Stefan Gsänger (WWEA Secretary General). Further welcoming speeches, focusing on the current developments and challenges of Community Power in Germany as well as the strong signal effects emanating from the COP 21’s Paris Agreement, were given by Jan Doberin (Association for Renewable Energy NRW), Viktor Haase (Foundation for Environment and Development NRW) and Dr. Hermann Falk (Federal Association for Renewable Energy Germany).

Against the backdrop of the 30th anniversary of the Chernobyl nuclear incident and the 5th anniversary of the Fukushima catastrophe, Dr. Tetsunari Iida (Institute for Sustainable Energy Policies, Japan) addressed the importance of Community Power for the success of the global energy transition in his welcoming speech. According to Iida, this transition needs to be deeply embedded in the society. Already 80% of the Japanese people reject nuclear energy, while the government still pursues a rather backward oriented nuclear policy. However, since 2011 renewable energy is ranking high on the agenda of active citizens and the civil society. The introduction of a guaranteed feed-in tariff set up a conducive framework for the deployment of renewables throughout Japan and 200 Community Power projects display the huge interest in “bottom-up” and decentralized energy generation. In 2016 the emblematic location of Fukushima will be the scene of Japanese Community Power when the city hosts the WWEA Community Power Conference in November; in addition to this, the World Wind Energy Conference 2016 will take place in Tokyo.



Participants of the WWEA Community Wind Symposium

The subsequent sections summarize the sessions of the symposium. All presentations of the Community Wind symposium can be found on the WWEA webpage under: <http://www.wwindea.org/presentations-international-symposium-on-community-power/>

1. Panel Discussion: Tendering Community Wind – Expectations on State and Federal Policy

Panellists:

- Günter Pulte, Rothaarwind GmbH & Co. KG
- Werner Soika, BürgerEnergie Issum
- Heinz Thier, BBWind
- Klaus Schulze Langenhorst, BWE NRW
- Jakob Müller, GLS Bank
- Dr. Katrin Gehles, Energieagentur.NRW



Panellists of the NRW expert discussion

Subsequent to the presentation of the NRW-case study's main findings, a panel of NRW-based Community Wind practitioners and experts chaired by Jan Dobertin (LEE NRW) discussed the future of Community Power in the region. The main findings of the case study were confirmed by the experts. In the further course of the discussion, the upcoming auctioning scheme and its implications for Community Wind deployment were at the centre of attention. Below, the essential themes of the discussion are summarized:

Who is driving and implementing the German “Energiewende”?

- Since the Fukushima incident in 2011 German policy makers from all the major political parties are paying lip service to the concept of Community Power. However, the people on the ground who really want to implement Community Power projects do not feel supported, they rather feel that more and more barriers are being set up.
- Currently, the number of newly registered energy cooperatives is declining after a strong boom phase from 2012-2014. This development is seen as problematic because the Community Wind model is considered to be a strong acceptance driver. Without this much needed acceptance, onshore wind, which can be regarded as the backbone of the German Energiewende, is expected to be thwarted.
- So far, the big German utilities overslept the Energiewende and the upcoming regulatory changes are expected to solely favour big market players. On the other hand, small market players, who pushed renewables from the niche into the mainstream and generated local added value as well as high acceptance levels are expected to be excluded from the market.

How to define Community Wind?

- The WWEA Community Wind definition (or another suitable definition) and an exemption mechanism should be included in the German Renewable Energy Act (EEG), even though a precise and legally binding definition of Community Power or Community Wind will be hard to agree upon as Community Power is a very heterogeneous concept.
- The cornerstones of such a definition should comprise:
 - Aspects of locality
 - Aspects of participation (financial and conceptual participation and voting right)
 - No limits with regard to the maximum capacity of a Community Wind project
- Voluntary activities are essential for the success of Community Wind, however, as a consequence of the rising complexity of planning processes, Community Wind stakeholders should also consider to collaborate with public utilities and external Community Wind developers in case they cannot realize a project on their own.

Expected effects of the upcoming onshore wind auctions

- In most cases, Community Wind projects are expected to be one-time market participants. If a project fails in the late planning phase or during the auction process, the loss cannot be compensated by other projects. This additional bid acceptance risk is expected to deter potential Community Wind implementers in the near future. From the experience of the experts, a withdrawal of those actors can already be observed. On the other hand, many projects are currently trying to acquire a BImSchG approval before 2017 in order to circumvent a participation in the auctioning scheme.
- The main motivation behind the introduction of onshore wind auctions seems to be to control the extension quantities rather than bringing down the electricity generation costs. Small extension corridors allow bigger market players to practice strategical bidding, while inexperienced and financially weak players lose out. In general, small extension corridors are expected to slow down the pace of the Energiewende.
- The underlying rationale of prospectus requirements for Community Wind projects organised as closed-end funds was to ensure risk disclosure and transparency. However, this will hardly be possible in an auctioning mechanism as the final bid cannot be predicted in advance. Currently, developers calculate a project based on the expected revenue, which will not be possible in the future.
- The financial risks related to the planning process already pose serious obstacles for Community Wind projects and the situation is expected to deteriorate under auctions. In order to support Community Wind projects, some cooperative banking institutions are already in the process of developing risk capital support mechanisms. While soundly planned Community Wind projects are not expected to face problems with regard to the acquisition of debt capital, equity raising is expected to be more difficult under auctions.

Demands of the Community Wind experts:

- To keep the guaranteed feed-in tariff for Community Wind projects
- To generate Planning security through a stable Renewable Energy Act
- To introduce a sound and legally certain Community Wind definition

In case Community Wind projects have to take part in the regular auction process:

- To introduce safety deposits ("bid bonds") only due after bid acceptance
- To introduce a one-tier reference revenue model catering for all possible locations
- To introduce larger annual extension corridors (up to 4'400 MW) to prevent strategical bedding and to keep the pace of wind energy deployment
- Not to limit Community Wind projects to a maximum capacity of 18 MW

2. Key-Note Session: Community Power in Europe

Speakers (all presentations online):

- Siward Zomer, REScoop: **Energy Cooperatives in Europe**
- Dr. Preben Maegaard, Nordic Folkecenter: **Status Quo of a Community Wind Trailblazer**
- Katherina Grashof, Institute for FutureEnergySymstems: **The benefits of Community Power**
- Dr. Josep Puig, Eurosolar Spain: **Community Power in Southern Europe**
- Dr. Jelte Harnmeijer, James Hutton Institute: **Final Spurt? Community Wind in the UK**
- Jonathan Bonadio, European Commission: **Renewable Energy and Cooperatives in the Context of the EU**

The first key-note session of the symposium was chaired by Roland Roesch (IRENA) and left the grounds of NRW and Germany with a focus on the bigger picture of Community Power and Community Wind in Europe. Two of

the short presentations approached Community Power from the pan-European perspective. The representative of the European Commission pointed to the key role of Community Power for the European Energiewende, which left some participants of the symposium puzzled as the Commission is regarded as the initiator of the upcoming auctions. Three of the presentations gave an overview of the status quo of Community Wind in their respective countries (Denmark, UK and Spain) and one presentation focused on a more general level by thoroughly examining the beneficial effects of Community Power projects (see section A chapter 3.2.). Moreover, in this session critical expectations on the upcoming auction schemes as well as an observed lack of conducive framework conditions for RET and Community Power deployment were put at the heart of many presentations. Nevertheless, the key-notes also pointed out the enormous potential of Community Power, as this form of RET deployment is able to contribute to local added value and local acceptance, no matter whether the projects are realised in Central, Southern, Northern or Eastern Europe.

3. Key-Note Session: Community Wind World-Trip: Status Quo, Problems and Solutions

Speakers (all presentations online):

- Canada: Dr. Christine König, Ontario Sustainable Energy Association
- Japan: Dr. Tetsunari Iida, Institute for Sustainable Energy Policies
- Australia: Hon. Peter Rea AO, WWEA Präsident
- Mali: Dr. Ibrahim Togola, Mali Folkecenter
- Mexico: Sergio Oceransky, Yansa Group
- South Africa: Neil Townsend, just energy

The second key-note session widened the perspective on Community Power and Community Wind on the global scale. Dr. Michael Köberlein (GIZ) chaired the “world-trip” that comprised presentations on the framework conditions, drivers and barriers for Community Power projects in six countries. With presentations from Canada, Japan and Australia, the first half of the session was assigned for speakers from industrialised countries whose energy systems are heavily based on fossil fuels (especially Canada and Australia) and nuclear energy (Japan and Ontario/ Canada). However, renewable energy deployment has already gained momentum in these countries. Impeding factors for greater uptake of the Community Power model comprise strong lobby organisations backing the incumbent carbon-intensive (or nuclear) energy regimes as well as inconsistent or insufficient political and economic framework conditions for renewables. On the other hand, sinking RET costs, the Paris Agreement and new, renewable-friendly governments (Australia and Canada) are expected to propel the energy transition and Community Power.

The second part of the key-note session focused on the status quo of Community Power in three developing countries. Mali, Mexico and South Africa are blessed with abundant renewable energy resources, but as yet, this abundance does not entail improved livelihoods of the countries’ inhabitants as RETs are not yet on the agenda of policy-makers. Mexico and South Africa can claim to be front-runners in large scale wind power extension over the last few years. However, the revenue and the added value of the wind farms in the two countries are mostly directed out of the country and into the hands of large, international investors. In Mexico, large scale wind power deployment has led to serious human right violations of indigenous people who were neither informed nor adequately compensated for land grabs by the multinational companies. This resulted in a violent conflict between locals, who are not necessarily opposed to wind power (one 100 MW Community Wind farm is under development) and the owners of the wind farm. According to the speakers, the Community Power and Community Wind models allow for a holistic approach to tackle problems of energy access, poverty alleviation and local sustainable development. At the moment, Community Power stakeholders face a broad catalogue of challenges, spearheaded by the market and lobby power of big, internationally active utilities and project developers and unfavourable framework conditions (like auctioning schemes with very high participation requirements) for small domestic market players.

4. Synthesis Discussion: What are the Guardrails of Global Community Power?

Panellists:

- Siward Zomer, REScoop
- Neil Townsend, just energy
- Dr. Hermann Falk, Federal Association for Renewable Energy Germany
- Dr. Roland Roesch, IRENA
- Stefan Schurig, World Future Council
- Gadi Hareli, Israeli Wind Energy Association
- Dr. Tetsunari Iida, Institute for Sustainable Energy Policies



Panellists of the synthesis discussion with Stefan Gsänger, WWEA Secretary General

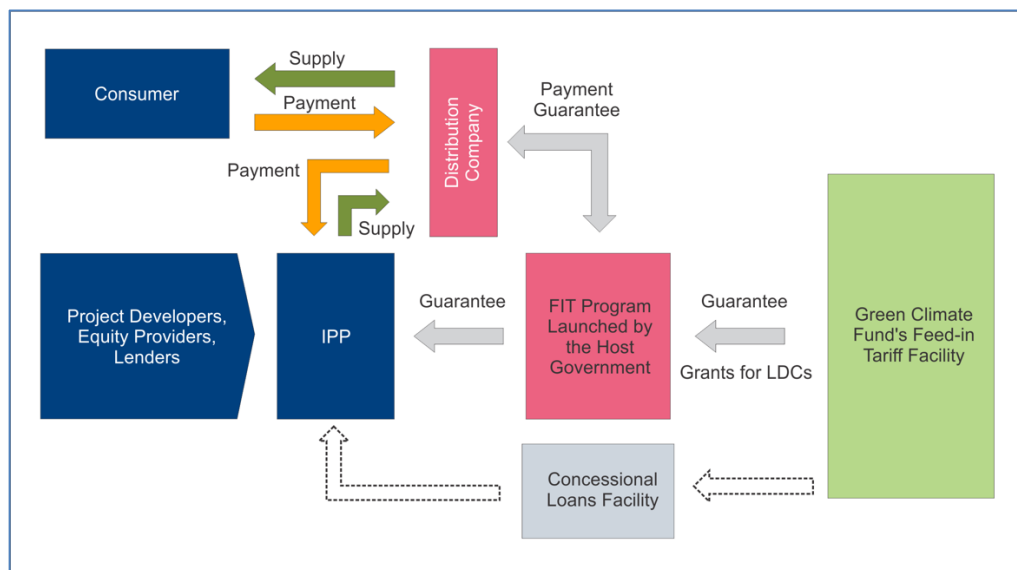
The international composition of the symposiums' last panel session allowed for a multi-faceted synthesis of the day and gave outlook on the future of Community Wind and Community Power on the global scale. The chair Dr. Harry Lehmann (Federal Environmental Agency) guided the discussion, in which the following requirements and conducive framework conditions for the diffusion of the Community Power model have been identified:

- Policy-makers around the globe need to recognise that the majority of people are in favour of a climate friendly renewable energy system. The beneficial effects of existing projects and initiatives in the realm of Community Power need to be recognised and ambitious Community Power stakeholders need to be strengthened further through favourable framework conditions and supportive policies.
- An often neglected, but positive effect of Community Power is the socialisation and the improved societal cohesiveness brought along by successfully realised Community Power projects. Consequently, the transition towards a renewable energy system is not only about investment opportunities and sustainable energy production by a handful of independent shareholders, but also about a more democratic and inclusive society as a whole. As soon as the people on the ground get a feeling for decentralized renewable energy and the right framework conditions are in place, the energy transition will be a sure-fire success.
- Cities and municipalities play an important role in the transition process towards a renewable energy system. They should take a pro-active role by road marking the transition, setting individual renewable energy goals and by pushing the topic on the agenda of national policy-makers as well as on the agenda of their citizens.
- In order to achieve the energy transition as soon as possible, large investment volumes are required. In addition to individual investments by Community Power shareholders the private sector, institutional investors and municipalities will also jump on the bandwagon of decentralized renewable energy projects. However, every individual should have the chance to participate in the energy transition by producing and consuming renewable energy.
- A successful and fast-paced energy transition requires massive amounts of valid and reliable data. Project developers, citizens, planners and politicians require a strong information base to make the right political, infrastructural and investment-related decisions. International organisations have a key role in coordinating data collection as well as in distributing renewable energy related data.
- Decision-makers in developing countries need to realise both the importance and the benefits of the Community Power model. In this regard, not much has been done to heighten the awareness of the Community Power model on a global scale. In times of sinking RET costs and more conducive investment environments, Community Power has the potential to tackle problems of energy access, poverty alleviation, sustainable economic development and climate change mitigation.
- The Paris Agreement sent a strong signal in favour of a renewable energy system. However, this momentum has to be preserved and the guardrails for the future have to be set up. Prior to COP21 the

most pressing questions was: Who has to carry the burden and who is responsible for climate change? After COP21 the question has rather become: Who will take up the new opportunities which evolve in the wake of a global energy transition? Many developing countries now have the chance to leapfrog carbon intensive energy technologies by RET deployment.

Section C: Ten Elements of a Global Community Power Strategy

1. Community Power is a driver and an essential precondition for the success of the global energy transition as decided in Paris 2015
2. Community Power brings about an equitable distribution of the benefits and advantages entailed by local and sustainable energy production, further, it enhances local added value, especially in developing countries
3. Community Power generates and secures acceptance and enhances societal support for the energy transition
4. Community Power projects must not be discriminated and they should have the same market access opportunities as any other market player
5. Guaranteed feed-in tariffs are proven to be the most effective policy instrument to provide equitable market access opportunities and, simultaneously, stimulate a dynamic expansion of renewables
6. There is a need for further policy and market instruments for the integration of renewables into the energy system which specifically harness the potentials and beneficial effects of the Community Power model
7. Community Power has a central role for a 100%RE future, especially when it comes to the decentral/local integration of renewables
8. Promising future business models for Community Power include: direct supply of 100% renewable electricity, e-mobility, heating and cooling and energy storage
9. Community Power stakeholders have to improve their local, regional, national and international networks and cooperation in order to strengthen their voice in the political arena
10. Community Power in developing countries can be kick-started and strengthened by a Global FIT programme (see Graph 23), for example within the context of the Green Climate Fund.



Graph 23: WWEA (2014)

Annex

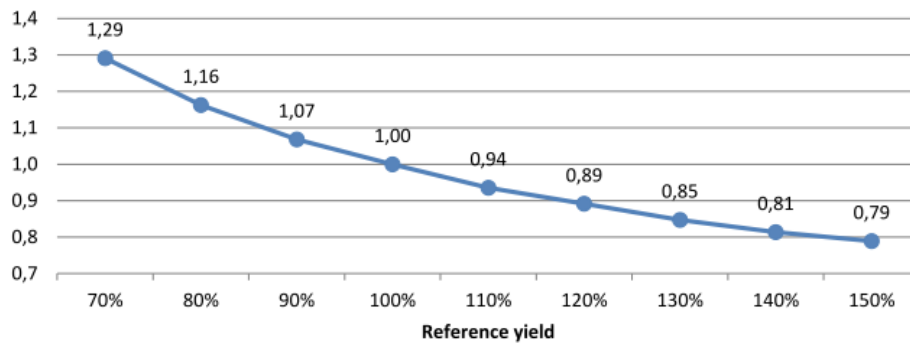
Overview onshore wind auction key points and one-tier reference revenue model

Source: BMWi Keypoints for Renewable Energy Sources Act amendment as of 15.02.2016

Key points for the upcoming auctions for onshore wind

As of February 2016

- First bid deadline 1 May 2017
- Future funding only for installations successful in an auction, it will not be possible for approvals to be transferred to other projects.
 - Exception: installations up to 1 MW
- Prerequisites for participation:
 - Approval under the Federal Emission Control Act (BImSchG approval)
 - Community Power projects exempted
 - Bid bond of 30 € per kW
 - Community Power projects: 15 € per kW for participation, 15 € per kW after bid acceptance
- 3-4 auctions per year, conducted by the Federal Network Agency.
- Auction rounds open for single, sealed bids.
- Bids must be based on the “value-to-be-applied”, which is calculated using a one-tier reference revenue model at a reference site (the ‘100-per-cent site’). This advanced model is to level the playing field across Germany and provide incentives for the construction of efficient installations.
 - A new reference site will be defined which will provide stronger incentives for the construction of efficient installations. In future, the reference value will be calculated based on the assumption that the wind speed at 100 m above the ground is 6.45 m/s. For higher installations, the wind speed is to be calculated based on the ‘power-law formula’, using a Hellmann Index of 0.25.
 - Operators will submit their bids based on these calculations, once these have been adjusted so that they fit the ‘100-per-cent site’. This means that the actual reference value expected for the installation will be multiplied by a statutory adjustment factor, and thus be converted into a reference value for a ‘100-per-cent site’. This makes it possible for the various bids to be compared.
 - It allows the Federal Network Agency to decide which bids will be accepted. Funding for those onshore wind installations that have been accepted will then be calculated based on the actual reference value (rather than the value adjusted to 100 per cent). This actual reference value will be defined for each individual installation, based on the results of expert opinions drawn up in accordance with the FGW Guidelines.
 - Once calculated, the funding rate calculated will apply for the entire 20-year funding period. The figure used as a reference yield will be revisited after 5, 10, and 15 years so that the funding can be adjusted in line with the installation’s actual yields.
 - Additional information on how the level of the funding will be calculated: The price at which the project was accepted will be multiplied by an adjustment factor, to yield the 100-per-cent adjustment factor. The Renewable Energy Sources Act will set out interpolation values in increments of ten (between 70 and 150 per cent). Linear extrapolation will be used to calculate values that fall in between these intervals. Below a reference value of 70 per cent, the adjustment factor will not be increased further. The adjustment factors have been chosen to provide incentives for new installations to be built across Germany, but with even stronger incentives for them to be built on sites where there is strong wind. The following interpolation values have been put forward:



- The maximum level for bids will be 7.0 cents per kilowatt hour for the 100-percent reference site, over 20 years. This rate is roughly the same as the one that currently applies under the two-tier reference revenue model (based on mixed calculations). Every year, this figure will be reduced by 1 per cent. The Federal Network Agency is free to increase/decrease this maximum rate by up to ten per cent if this is warranted by circumstances linked to the competitive situation and/or the cost situation.
- Bids will be accepted, starting with the lowest, and until the amount of capacity that is being auctioned is reached. In principle, the amount of funding corresponds to the individual bid (pay-as-bid principle).
- Installations should be completed within two years after the bid has been accepted. After 30 months, the acceptance will no longer be valid. This deadline can be extended once in cases where a lawsuit has been filed against a project.

Bibliography

All presentations of the Community Wind symposium can be found on the WWEA webpage under:

<http://www.wwindea.org/presentations-international-symposium-on-community-power/>

- Advisors, Arabella. 2015. "Measuring the Growth of the Global Fossil Fuel Divestment and Clean Energy Investment Movement." <http://www.arabellaadvisors.com/wp-content/uploads/2015/09/Measuring-the-Growth-of-the-Divestment-Movement.pdf>.
- Baker, Lucy. 2015. "The Evolving Role of Finance in South Africa's Renewable Energy Sector." *Geoforum* 64. Elsevier Ltd: 146–56. doi:10.1016/j.geoforum.2015.06.017.
- Bloomberg. 2016. "As Oil Crashed, Renewables Attract Record \$329 Billion." <http://www.bloomberg.com/news/articles/2016-01-14/renewables-drew-record-329-billion-in-year-oil-prices-crashed>.
- BMWi. 2015. "2016 Revision Amending the Renewable-Energy-Sources-Act." doi:10.1007/s13398-014-0173-7.2.
- — —. 2016. "Fortgeschriebenes Eckpunktepapier Zum Vorschlag Des BMWi Für Das Neue EEG."
- Brühl, Volker, and Uwe Walz. 2015. "Das Anhaltende Niedrigzinsumfeld in Deutschland CFS Working Paper No. 465."
- Bündnis Bürgerenergie e.V. 2015. "BBEn-Hintergrundpapier - Kurz-Auswertung Der Stellungnahmen Zum BMWi-Eckpunk Tepapier Zu Ausschreibungen Für Erneuerbare Energien." http://www.buendnis-buergerenergie.de/fileadmin/user_upload/Hintergrundpapier_Stellungnahmen_Ausschreibungen_BBEn.pdf.
- DRGV. 2014. "Energiegenossenschaften Ergebnisse Der Umfrage Des DGRV Und Seiner Mitgliedsverbände Frühjahr 2014," 1–15.
- German Wind Energy Association BWE. 2015. "Akteursstrukturen von Windenergieprojekten in Deutschland." https://www.wind-energie.de/sites/default/files/download/publication/akteursstrukturen-von-windenergieprojekten-deutschland/20150218_studie_akteursvielfalt_final.pdf.
- German Wind Energy Association BWE. 2012. "Community Wind Power: Local Energy for Local People," 24. http://www.wind-energie.de/sites/default/files/download/publication/community-wind-power/bwe_broschuere_buergerwindparks_engl_10-2012.pdf.
- Greenpeace Energy. 2015. "Nutzeffekte von Bürgerenergie," no. August.
- Kreis Steinfurt. 2015. "Bürgerwindpark Leitlinien." <http://www.nlf-buergerwind.de/media/nlf/documents/leitlinien-buergerwindpark.pdf>.
- LANUV. 2015. "Energieatlas NRW." Accessed December 29. <http://www.energieatlasnrw.de/site/nav2/Wind.aspx?P=7>.
- — —. 2015. "Erlass Für Die Planung Und Genehmigung von Windenergieanlagen Und Hinweise Für Die Zielsetzung Und Anwendung (Windenergie-Erlass)," 1–90.
- Li, Li Wen, Janine Birmele, Harald Schaich, and Werner Konold. 2013. "Transitioning to Community-Owned Renewable Energy: Lessons from Germany." *Procedia Environmental Sciences* 17. Elsevier B.V.: 719–28. doi:10.1016/j.proenv.2013.02.089.
- Mayring, Philipp. 2002. *Einführung in Die Qualitative Sozialforschung. Einführung in Die Qualitative Sozialforschung*. <https://kataloge.uni-hamburg.de/DB=1/SET=5/TTL=1/SHW?FRST=10>.
- Mühlenhoff, Jörg. 2010. "Kommunale Wertschöpfung Durch Erneuerbare Energien." *Renews Spezial*, no. 46: 24.
- Musall, Fabian David, and Onno Kuik. 2011. "Local Acceptance of Renewable energy—A Case Study from Southeast Germany." *Energy Policy* 39 (6): 3252–60. doi:10.1016/j.enpol.2011.03.017.

- NRW, LEE. 2015. "Windenergie in Deutschland Und NRW Windenergie in NRW," no. September. <http://www.lee-nrw.de/wp-content/uploads/2015/10/Windenergiefakten-NRW-und-Deutschland.pdf>.
- REN21. 2015. "Key Findings," 1–33. http://www.ren21.net/wp-content/uploads/2015/07/GSR2015_KeyFindings_lowres.pdf.
- Renewable, International, and Energy Agency. 2015. "Renewable Power Generation Costs in 2014," no. January.
- Toke, Dave. 2009. "Community Wind Power in Europe and in the UK." *Wind Engineering* 29 (0): 301–8. doi:10.1260/030952405774354886.
- Trend:Research, and Leuphana Universität Lüneburg. 2013. "Definition Und Marktanalyse von Bürgerenergie in Deutschland," 76.
- Valentine, Scott. 2015. *Wind Power Politics and Policy*. New York: Oxford University Press.
- Vestager, Margrethe. 2016. "Antwortschreiben de-Minimis Auslegung." <https://www.wind-energie.de/presse/meldungen/2016/ausschreibungen-eu-wettbewerbskommissarin-zum-thema-de-minimis-0>.
- Viardot, Eric. 2013. "The Role of Cooperatives in Overcoming the Barriers to Adoption of Renewable Energy." *Energy Policy* 63. Elsevier: 756–64. doi:10.1016/j.enpol.2013.08.034.
- WWEA. 2014. "Improving Investment Conditions for Wind and Other Renewables in the Developing World: Challenges, Prospects & Solutions." <http://www.wwindea.org/wp-content/uploads/2014/10/Improving-Investment-Conditions.pdf>.
- Yildiz, Özgür. 2014. "Financing Renewable Energy Infrastructures via Financial Citizen Participation – The Case of Germany." *Renewable Energy* 68. Elsevier Ltd: 677–85. doi:10.1016/j.renene.2014.02.038.
- Yildiz, Özgür, Jens Rommel, Sarah Debor, Lars Holstenkamp, Franziska Mey, Jakob R. Müller, Jörg Radtke, and Judith Rognli. 2015. "Renewable Energy Cooperatives as Gatekeepers or Facilitators? Recent Developments in Germany and a Multidisciplinary Research Agenda." *Energy Research & Social Science* 6. Elsevier Ltd: 59–73. doi:10.1016/j.erss.2014.12.001.



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