

JustWind4All case studies **MIDTVEST, DENMARK**

WIND ENERGY DEVELOPMENT IN MIDTVEST, DENMARK

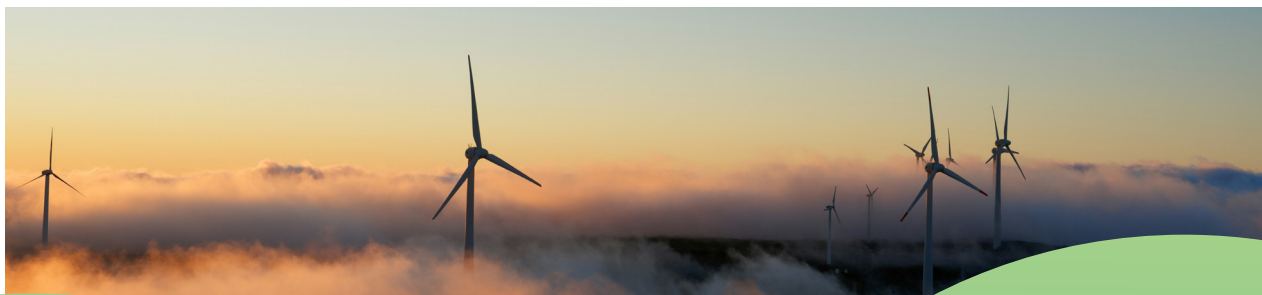


Denmark has a long and rich history of wind energy development and a reputation as a pioneer in the field: but recently there has been more public resistance, especially related to attempts to expand onshore wind. Despite a historical dependence on coal and oil, Denmark significantly developed its wind energy sector throughout the 1980s to the early 2000s following concern for environmental awareness. The current energy mix is dominated by renewables, which constitute 50% of energy production, but oil still plays a significant role. Of this, the total installed capacity of wind energy in the country is 6.995 GW. Denmark has also set ambitious targets for phasing out fossil fuels and becoming a zero-carbon economy by 2030 and 2050 respectively. However, some political stagnation exists regarding the country's climate policy, given that numerous ministers are in favour of a “hockey stick” approach that postpones the implementation of renewable technologies until just before the deadline in 2030, with the hope that the technologies have become cheaper by this point in time. This approach has been heavily criticised for potentially hindering progress and damaging Denmark's position as a frontrunner in renewable energy.

Business Region MidtVest is notable for wind energy production: together, its seven municipalities produce the largest contribution to Denmark's total production of wind energy, compared to the other business districts. Much of this capacity is centred in the municipality of Ringkøbing-Skjern, which is also in close proximity to the Esbjerg port (foreseen as the world's largest base port for offshore wind activities). MidtVest's focus on offshore wind projects (which are managed by government agencies like the Danish Energy Agency) is interesting given the high volume of onshore wind turbines and the strong potential for repowering programmes in the region. Given this context, the case study centred around investigating the dynamics affecting the potential development of onshore wind energy in MidtVest.

**6,995
MW**

total capacity of
installed wind
turbines in Denmark



In the context of the JW4A project, this case study investigates Danish wind energy governance with a specific focus on onshore repowering. The research data collected and the analysis centres around three specific repowering projects in MidtVest, alongside valuable context related to the area's energy planning policies and strategies. These repowering projects are the following: 1) the Krejbjerg wind project in Skive municipality, which was delayed by public opposition and later sold to a large Copenhagen-based utility company, 2) the Sdr. Bork Vindpark in Ringkøbing-Skjern municipality, a popular repowering project initiated by local landowners, and 3) the Midtjyske Motorvej wind turbines in Ikast-Brande municipality, a highly contested project unpopular with the local community and local politicians alike, which was eventually sold to a German investment company. The analysis of the empirical data centres around the concepts of distributive and procedural justice, and effectiveness, as they relate to each case and to the wind energy landscape in MidtVest as a whole.

Based on this work and the analysis of empirical data, the following recommendations were formulated: incentivising local ownership by developing existing policies, improving participatory practices by ensuring transparent dialogues to bridge the gap between the actors involved in wind energy processes, and making repowering more effective and financially viable for wind turbine owners in order to increase its appeal over new developments (like by reducing permitting times and stimulating the recyclability of turbines). These recommendations are described in more detail below.



Recommendations

In the Danish case especially, it is apparent that repowering is an effective way of increasing a country's wind energy capacity. In densely occupied wind turbine regions, repowering can lead to an increase in capacity alongside a potential decrease in the overall number of turbines. In cases where repowering projects reduce the visual impact of onshore wind turbines (i.e. by replacing a large number of wind turbines with fewer, more efficient ones), there is also a greater potential that they will be popular with the public.

The Danish electricity grid is reaching its limit, and the interviews with the two OEMs revealed that onshore wind and repowering initiatives are no longer financially worthwhile for project owners. Furthermore, it has become a priority in the Danish wind industry as a whole for developers and investors to place wind turbines far offshore instead. Onshore repowering remains an important approach and should be pursued as a strategy to increase energy efficiency and capacity, but it needs to be promoted, so that actors in the Danish wind energy sector see it as a viable option for the future.

DISTRIBUTIVE JUSTICE

Local ownership

Repowering projects can reduce the amount of community ownership: this is evident in cases like the Krejbjerg repowering project, where its sheer size and scale required investment from outside the local community. High costs often discourage local investors from initiating/pursuing repowering projects in MidtVest, meaning that projects are typically sold to larger developers at some point.

The green pool (Grøn Pulje) is a scheme wherein a municipality receives a one-off payment from the wind project developer of DKK 125,000 [approx. EUR 16,746] per MW connected to the grid. This lump sum is then used to fund “green” projects initiated by residents within the municipality. However, sources like Green Power Denmark argue that the green pool funds are inflexible and do not correspond with citizen needs, rendering them less beneficial for local communities than they could and should be (Berggreen, 2023).

1. Recommendation: Tailor the green pool so that funds become available specifically for locally owned repowering projects (Berggreen, 2023). Adapting this scheme would be an important step for making onshore efforts like repowering more viable or worthwhile in comparison to offshore ones. More locally owned projects would also positively impact inhabitants’ opinions on wind energy.

This is exemplified by the contrast between the Sdr. Bork and Krejbjerg repowering projects. In Sdr. Bork, much of the positive public discussion of the project highlighted the fact that it was a “local” initiative started by “local” landowners, and that it allowed local residents the opportunity to financially participate by purchasing shares (Tornbjerg, 2022). By contrast, critiques of the Krejbjerg project, especially following its sale to HOFOR (a large, Copenhagen-based utility company), were based on the perception that “Copenhagensers” were coming to rural areas like Skive and disrupting them by developing wind projects (Vibjerg, 2021), with no consideration of the needs and preferences of “local” people.

2. Recommendation: Give citizens a bigger say in how the money of the green pool is distributed/ invested. Other policies also encourage local investment and ownership to some extent. The Buyer’s Rights Scheme stipulates that a wind project developer must offer 20% of the total project value to local citizens for purchasing. However, shares can be expensive; often costing between DKK 3200 [approx. EUR 420] and DKK 3,800 [approx. EUR 509] apiece.

3. Recommendation: Lower the cost of shares offered through the buyer's rights scheme to increase their accessibility to a greater number of residents.

However, the buyer's rights scheme does not ensure community participation or "ownership" until far later in the process, and provides more of a top-down monetary solution to impacted residents (Johansen 2021, p.10). The Guarantee Fund could be considered a more effective strategy for local ownership, as this is a loan guarantee of maximum DKK 500,000 [approx. EUR 67,060] intended for wind projects initiated by local groups of at least 10 members (International Energy Agency, 2021). However, there is still a significant financial risk associated with a loan of such magnitude, so perhaps there is a need to expand a grant or subsidy-based system.

PROCEDURAL JUSTICE

Participatory development processes

Public involvement seems to be a crucial factor in successful/well-received wind projects: the perception of wind developers is also important, especially the extent to which the developers interact with, or are connected to, the local community throughout the development process. Environmental assessments being done thoroughly/being deemed sufficient by the local community is also an important factor.

4. Recommendation: Ensure that information is publicly available (like on a public database) to guarantee transparency and awareness about project changes among residents.

For example, in the Midtjyske Motorvej case, project documents were only available on request. Given that the Ikast-Brande and Vejle municipalities had received many access requests, they struggled to respond in a timely manner. As a result, citizens submitted formal complaints stating that they could not be as involved in the project as they wanted to be, because they did not have access to important information.

5. Recommendation: Ensure regular dialogue between developers, residents, and government actors (for example, by expanding on existing regulations, which stipulate that at least two information/dialogue sessions with the public must occur during the course of wind project development). A positive collaborative relationship between wind developers and residents is especially important in the planning process; as citizens often feel blindsided and overlooked when decisions are made too "top-down". Therefore, making this process more transparent from the start can ease the relationship between developers and the public.

This is also visible in the case of the Midtjyske Motorvej wind turbines. Here, residents submitted official complaints alleging that they had not been consulted about last-minute changes to the project planning and that the municipalities had insufficiently assessed the project's potential

impact. What made matters worse in this case is that residents only received an official response/ verdict regarding their complaints in 2020, almost three years after the wind turbines had already been approved and built.

EFFECTIVENESS

Processing and permitting time

One hurdle is that even though many repowering projects are theoretically the “same” project as before, just being upgraded, they still require new permits. Requiring new investigations like environmental assessments seems justified, given that both the location and the size of new turbines often differ to the original/ageing turbines: however, it is often a lengthy process (Interview 1, 2023), meaning that investors frequently lose interest in this timeframe. Recent developments like the Marine Plan and the cancellation of the Open Door scheme have also obstructed the supply chain somewhat (as discussed in the interview with one OEM).

6. Recommendation: Reduce permitting time for onshore repowering to a maximum of a few months or weeks, as is stipulated by the EU Council Regulation from 2022. This does not necessarily mean that a trade-off has to occur regarding local participation and procedural justice, as this approach can be combined with a full commitment to transparency and inclusivity through the strategies described above.

Grid capacity

Repowering could lead to an increase in electricity production which can lead to insufficient grid capacity; as the surplus of electricity is not necessarily accommodated in the grid. This is an issue that should not be overlooked.

7. Recommendation: Make sure the electricity generated from renewable sources can be utilised. Establish local utilisation of energy, for example through storage systems for the surplus (for example, in batteries or hydrogen systems) before a repowering project is completed, so that this increased energy production does not go to waste. This consideration should factor into the planning process.

For example, people were opposed to the Midtjyske Motorvej wind turbines partly because there was no transformer station and/or grid connection in place to actually capture the energy produced by the turbines, so local residents felt as though the wind turbines were set up unnecessarily.

Such projects are unpopular (especially with local communities) because they take up space and have a visual impact without providing any immediate benefits.

Critical Raw Materials

It is essential for wind turbines to use Rare Earth Elements (REE). However, their supply is limited and/or restricted to various countries or locations, making them rare.

8. Recommendation: A unified European strategy in securing CRM (Critical Raw Materials) following ESG standards is needed to secure future development of wind energy.

Recyclability

Governance on recycling standards is also important in order to enable a circular wind turbine industry.

9. Recommendation: Stimulate recyclability of wind turbines by ensuring that money from the green pool can be used to improve the recycling capabilities of repowered projects. This would also ensure compliance with circular economy goals. Additionally, on a legislative level, setting recycling standards can help the recyclability of wind turbines.

JustWind4All took a detailed dive into **just and effective wind energy governance** in diverse regions in the EU, summarised in seven case studies. Keep exploring the nuances of energy justice and participatory practices, summarised in regional recommendations and inspiring solutions.

DIVE DEEPER INTO THE SEVEN JUSTWIND4ALL CASE STUDIES

