

# Inside



Active in 16 countries: Solar at wpd Page 8

Complex assignments:  
Challenges in project realisation

Page 3



## Wind energy in woodlands

wpd plans and realises woodland projects in an environmentally compatible way

Page 4



*think energy*

# Always from a single source: project development at wpd

## With experience and strong partnerships – project procurement at wpd

A wind energy project can take very different paths, starting from the initial idea for the project to its actual realisation. For example, the project rights may be sold which will change the responsibilities for a project accordingly.

If the financial risk appears too high to a smaller developer or the uncertainty in the planning and approval process or call for tenders seems too great, it may make sense for the project rights to be acquired or to collaborate with an experienced developer such as wpd who has a track record of successful implementation. This is where the project procurement teams spring into action. The projects procured are acquired at very different stages of project development, many already with ongoing processes, some only after the permit has been obtained. However, most collaboration projects begin with an idea as greenfield projects.

**In its domestic market of Germany, wpd enjoys a wealth of experience in the procurement of projects and the development of these projects with regional partners.**

Different areas of expertise can be optimally combined in such collaborations. We drive these partnerships together with individual actors or smaller engineering offices up to large project developers and energy providers, and have realised many significant energy turnaround projects in this way.

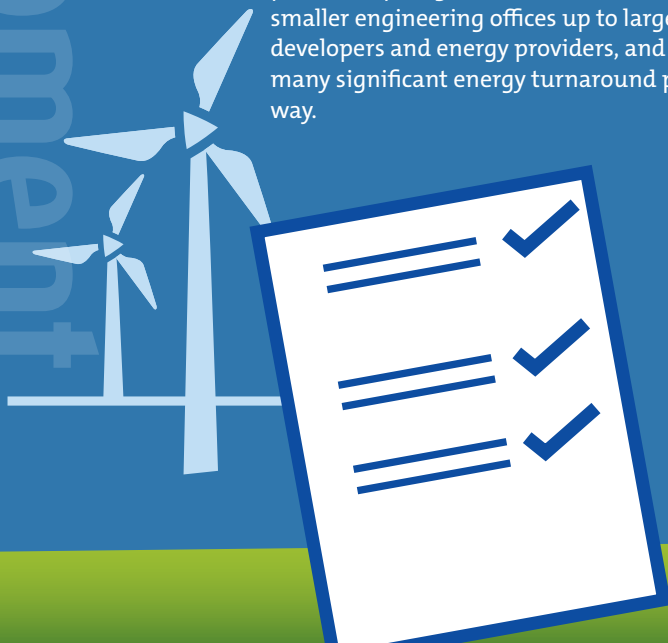
## From a single source – in-house development at wpd

Strong in-house development is the other pillar of our success concept. In the process, we always conceive projects from the perspective of their implementation which facilitates ongoing reviews, fast readjustment in the planning and approval process and ultimately a high chance of realisation (nearly 100 %). Intensive support from our in-house technical departments for proceedings under the Federal Immissions Control Act and all further certification proceedings required, are also key factors, from the preliminary planning to realisation. Our teams rely on careful preparation of the application, professional support for the proceedings and close consultation with approval authorities and technical bodies.

The success of this approach combined with the patience to overcome wide-ranging obstacles to approval can be seen on the basis of the approval figures of the last few years. For example, permits were successfully obtained for around 100 MW in four projects in the district of Uelzen in Lower Saxony in 2021/2022. The project team in the district of Rostock in Mecklenburg Western Pomerania was also able to celebrate a special success largely based on many years of intensive commitment. Three permits for a total of around 65 MW were obtained there in 2023.

**wpd has ranked among the most successful developers in Germany for years.**

Through in-house development and project procurement, we were able to obtain permits for 19 projects in 2023 for a total of 62 wind turbines and around 320 MW. In addition, we also submitted applications for over 1,000 MW last year and we look forward to building on this success in 2024.





## Project realisation at wpd – competent and always on the scene

*Transfer station in wpd's  
"Am Hainberg" project*

The realisation of a wind turbine or an entire wind farm comprises a complex number of very different processes, phases, requirements and participants. Coordination and communication are of major importance in order to ensure that the process runs as smoothly as possible.

At wpd, this is reflected primarily in two functions. All the threads of a project converge in the background, so to speak, on the Implementation Manager. This colleague of ours coordinates all the project-specific processes, from obtaining the permit to commissioning which guarantees a fast, comprehensive flow of information. Furthermore, the Technical Project Manager is also crucial when it comes to implementation. Our colleagues know the project down to the last detail. They are the permanent contacts, the "face of the project" on the ground, familiar to the land owners since the approval planning. Accordingly, projects at wpd are guided through the development process with this twin expertise, from the permit to commissioning.

The successful implementation of the project also extends beyond the mere installation of the turbines. It is far more complex and this complexity manifests itself in the participation of the different departments and their assignments. For example, the Construction department plans the entire infrastructure of a wind farm, from the access roads, short and long-term storage areas to the foundations for the turbines including intensive support for the engineering offices and subcontractors involved. This department provides the construction management

for the turnkey construction of wpd's wind farm. Support for engineering offices and subcontractors is also on the to-do list of the Electrical department. All the work for the planning and implementation of the electrical connection of the turbines is performed here. It comprises steps such as obtaining the necessary building permits or designing and realising the entire electrical engineering infrastructure from grid connection approval, cable lines to the finished transformer substation or transfer station. The design of the grid connection is of especial importance in times of limited grid capacity.

Finally, the compensation and replacement measures, C&R measures for short, are also significant in the realisation of projects. With respect to the unavoidable interventions in nature and the landscape which usually affect the scenery, soil and the ecosystem, according to the Federal Nature Conservation Act, compensation measures must be implemented. wpd has its own department for compensation measures in order to plan the essential projects comprehensively and at the same time sustainably from a single source and to implement them in close consultation with the subcontractors involved.

When it comes to realising the project, wpd combines everything under a single roof, remains on site as a point of contact and takes responsibility for the entire performance as the lead agency: a decisive advantage for the successful implementation of our projects.

*Construction of a cable  
line in the Bankewitz  
wind farm*



Wind farms in woodlands realised by wpd



Wind farm Lauterstein

## Technical knowledge for more wind energy in woodlands

wpd possesses great expertise as a developer of wind energy in woodlands. In the 21 MW Helsen-Pessinghausen project situated north-west of Kassel, not only do we contribute towards carbon-free energy generation, the revenues from leases for sites and paths will also help to create a more climate-stable

woodland. For our woodland project in Baden-Württemberg's Laichingen, we will be using the certified IdentiFlight system for the first time with which large bird species (such as the red kite) can be recognised and protected by switching off turbines at short notice.

## wpd intensifies close exchange with University of Poznan



Excursion to the Słupca-Kołaczkowo wind farm

At the end of last year, wpd Polska was appointed as a member of the Council of Experts of Poznań University of Life Sciences. Over the last few years, the Polish team has established an intensive collaboration with the university, holding various workshops and carrying out excursions. The aim of the collaboration is to prepare students on their path to a professional career for the challenges of business. As part of the Council of Experts, wpd will commit to organising internship programs and study trips but also to delivering lectures to be given by members of staff.

## wpd's new transformer substations bringing green electricity to the grid

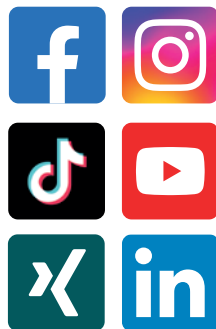
wpd is implementing numerous projects in Germany with ever larger turbine outputs. As a result, the requirement for transformer substations which facilitate grid connection to the overhead power lines of high-voltage networks, is also rising. At the start of the year, the company was able to report five building permits for new transformer substations, for wind farms such as Helsen-Pessinghausen or Klein Süstedt, but also for the Sallgast PV project. Construction has already begun in some cases or is imminent. At the same time, new transformer substations were successfully connected to the high-voltage grid, e.g. the substations for the Flinten and Müssingen wind farms in Lower Saxony or Wulkow-Trebnitz in Brandenburg.



*The Wulkow-Trebnitz transformer substation already built*



## wpd with social media offensive



The energy turnaround requires expert minds and employees with a hands-on approach and commitment. wpd is constantly on the lookout for new employees, in a wide variety of fields and departments, around the world and in particular in the domestic market of Germany. Our presence on social media constitutes an important contribution to the success of this search. Thanks to our presence on LinkedIn, Xing, Instagram, Facebook, TikTok and also YouTube, we have become even more visible as a potential employer since the end of 2023.

## wpd at the Green Week again in 2024

After a successful initial trade fair attendance in the previous year, wpd again attended the "Green Week" in Berlin in 2024, the leading international trade fair for food, agriculture and horticulture. From 19 to 28 January, our team presented on the stand hosted by the German Forestry Council (DFWR). The DFWR perceives itself as the voice of the forest and it represents all stakeholders involved in woodland and forestry management across Germany. Working side by side with the wind energy industry, it recognises the opportunity to collectively combine climate protection and forestry protection on a financially secure footing.

*The wpd team at the "Green Week"*



## Sao Paulo moves onto the wpd world map



After Colombia had already been selected as a new wpd location in South America and an office in Bogotá was opened last year, this year Brazil joins Chile and is now the third country on the

subcontinent. In February, our Brazilian subsidiary wpd do Brasil Ltda. opened a branch in São Paulo to drive forward the establishment and development of our pipeline in South America's largest country.



## Approval for 156 MW in Sweden



The wpd team in Sweden has been able to celebrate the receipt of approval for the Ripfjället project. A total of 26 turbines, each with a capacity of 6 MW, are planned for the project, which is located on a windy plateau in the central Swedish province of Dalarna. The project will generate around 580 GWh per year, enough to supply around 110,000 households with electricity. The site, which is mainly used for forestry, is owned by the municipality of Malung-Sälén and a number of private landowners.



## Strong commitment from wpd Italia

Our wpd country office in Italy cooperates closely with the Italian section of Green Cross International, the environmental network founded in 1993 by Nobel Prize winner Mikhail Gorbachev, which is particularly committed to educating people about ecological sustainability. Most recently the team held educational workshops at a school near a project location on the topic of renewable energies and organized the so-called "Festival of the pinwheels". An important contribution to raise awareness of the importance of renewable energies and on the other hand to increase social acceptance of wind turbines.

## Grid connection secured in the north of Sweden

In the north of Sweden, wpd has secured the grid connection for a major project. In the northern Swedish province of Västerbotten, the construction of the 385 MW wind farm project Råliden is planned. "Råliden" refers to a mountain range far away from inhabited areas on the border between the municipalities of Skellefteå and Piteå, whose very good wind conditions are to be used by 54 turbines in the future. With this important success behind them, our Swedish wpd colleagues will now press ahead with the project planning.




*Wind farm Stölsäterberget realized by wpd in 2023*

# With growing expertise and highly professional implementation



## Quick PV facts in Germany

  
**3.7 million**  
solar panels installed

**61 TWh**  
of electricity produced

Proportion of gross electricity generated  
**11.9 %**



  
**81 GWp**  
of installed capacity

**215 GWp**  
planned expansion by 2030

Employees in 2021, estimate  
**58,500**



(Figures for 2023; Sources: BSW Solar, UBA, AGEB)

wpd realised its first PV project in Germany a good 22 years ago. In Bavaria, we connected the Markstetten solar park to the grid in 2001 – as part of the subsidisation of renewables projects through the Renewable Energy Act. Back then, we outlined the vision of developing our major PV projects independently in the future and free of subsidies. We have turned what was still a vision in those days into a reality with a steadily growing project pipeline.

**An increasing number of projects are transitioning from the planning phase into implementation, and from there they will enter operation in the future. In 2024, for example, preparations are underway in Germany and France to start constructing solar projects with a total capacity of 300 MW.**

In December, wpd's German solar team was able to celebrate winning the Sallgast contract in the round of tenders for PV projects. According to the planning process, construction for this 35 MW project situated in the Elbe-Elster district in South Brandenburg is due to start in August/September 2024. The bid was also won for the Veringenstadt South PV project with a capacity of 8 MW. Two contracts won that reflect the successful project work of wpd's solar teams.

In France, wpd has been operating its own photovoltaics division since 2017. With a 40-strong team in 8 locations and a project pipeline of 1.25 GW, we are well positioned in the local PV market. In the Bourgogne-Franche-Comté region in Central France, preparations have now started for the construction of a 135 MW project including the installation of a separate transformer substation.

Although by comparison with wind energy projects, the construction of PV projects may ultimately be comparatively fast, it still requires the same degree of expertise, professional coordination and efficient agreement of the processes with all participants. As experienced developers and partners, our teams have all the potential requirements covered.

The practical experience of our teams with the conditions for project planning and implementation under a wide range of different market conditions is also growing hand in hand with the expansion of our international activities. We are now working on PV projects in 16 countries around the world.

Thanks to this growing expertise, wpd's Solar division guarantees precisely the professional project management and controlling demanded by large investments in challenging projects – and does so on a global scale.



# wpd Italia celebrates start of construction, sending a positive signal



Construction work on Sicily

30 MW, seven turbines, Licata, province of Agrigento, Sicily – these are very special coordinates for wpd Italia, as the team was able to celebrate the start of construction on its first onshore wind project in the challenging Italian market for renewable energies at the end of last year. In the province of Agrigento on the southern coast of Sicily, the largest island in the Mediterranean, lies the town of Licata, which has a population of almost 35,000. In the middle of the vineyards surrounding the town, the seven wind turbines of the first wind farm to be realized by the Italian wpd team are gradually being erected.

The „Parco Eolico di Licata“ is just the first step on the successful path that wpd has mapped out in Italy for the implementation of the country's energy transition. The team, which is based in Rome, Cagliari and Bari, has built up a project pipeline of more than 1.3 GW of wind energy projects that are currently in the approval phase. As a further success, the building permit for „Parco Eolico Montaratro“ was granted in 2023. The wind farm with a capacity of 81.2 MW is being built in Apulia, in the municipalities of Troia and Lucera in the province of Foggia.

A special feature of all wpd Italia projects under construction and development is that so-called „biodiversity oases“ are created in collaboration with a partner.



This includes planting particularly flower-rich tree varieties and setting up beehives and insect hotels. The concept is all about the possible coexistence of renewable energies and nature and is intended to become a kind of „trademark“ of wpd Italia's work.

wpd is making a strong contribution to the success of the energy transition in Italy, has significantly expanded its team over the past year and has also created a new line of business for the development of solar PV projects.

Unfortunately, there are still delays due to bureaucracy in particular for the authorisation process of renewable power plants, mainly due to the strong opposition of the Cultural Heritage Ministry.

2023 was not only an important year for wpd Italia, but also for the development of renewable energies in Italy. According to the transmission system operator Terna, Italy's total energy demand amounted to 306 TWh, a decrease of 2.8% compared to 2022. At the same time, renewables covered 36.8% of Italian demand at 112.7 TWh and supplied 15 TWh more electrical energy than in 2022. Both wind and solar energy set new records. While wind energy in Italy produced a total of 23.4 TWh, an increase of 3 TWh (+ 15.1%) compared to 2022, solar energy recorded an increase of 2.9 TWh (+10.6%) and a new all-time high with an annual production of almost 30.6 TWh.

However, the issue of bureaucratic delays in the approval process for renewable energy projects, which is mainly due to strong resistance from the Ministry of Cultural Heritage, remains an obstacle to the energy transition in Italy for the time being. Trade associations such as ANEV and Elettricit  Futura, environmental associations such as Greenpeace, Legambiente and WWF Italia and project developers such as wpd are emphatically pointing out this problem and increasingly making their voices heard.



## Old trees, ponds and dust bowls

*Left: Setting up a bat box site (wind farm Hillmersdorf)*

*Right: Shallow pool for new habitat for insects, amphibians and bats (wind farm Mahndorf)*

Compensation and replacement measures (C&R): just a condition for obtaining a permit or also an issue in operational management?

“The motto in many wind farms is unfortunately ‘out of sight, out of mind’”, says Björn Rohde-Gartmann, C&R expert and team leader for the conservation of nature and species at wpd windmanager. “Sometimes, the prevailing view is that C&R measures represent a one-time obligation that finishes with commissioning.” But that is wide of the mark.

### Risk that turbine operation will be stopped

One look at the Federal Nature Conservation Act (BNatSchG) will explain all. The BNatSchG governs avoidance, compensation and replacement. It also defines originators’ obligations and specifications regarding species protection. The so-called diversion or preventive measures for black storks, bats, red kite and other species also play an important role. “If these measures fail to comply with the permit, there is a risk of high monetary fines or even an order to stop operation of the turbines”, Rohde-Gartmann explains.

This C&R specialist knows what he’s talking about. At windmanager, he and his department currently manage around 1,600 measures totalling an area of roughly 15,600,000 m<sup>2</sup>. These measures are very wide-ranging, stretching from orchard meadows or saving older trees, constructing ponds or pools to the creation of grasslands or dust bowls enabling birds to preen their plumage. More than 260 of the measures supervised are particularly sensitive as they constitute species protection measures. And this figure is rising.

### C&R measures for operations managers.

The range of tasks is extensive. With his team at wpd windmanager, the C&R expert takes on the role of initiating, identifying and monitoring the measures.

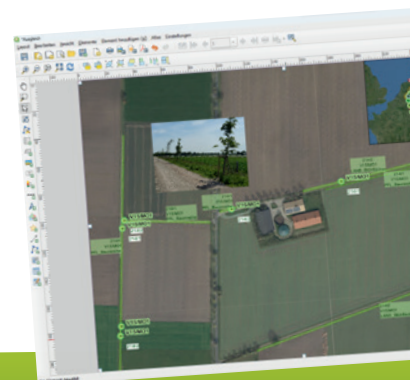
“We also take care of restoration or official acceptance on site”, Rohde-Gartmann states. Many of our customers are wind farm operators. But other operating managers also commission us as they don’t have the necessary resources themselves.”

In order to carry out well-founded, objective assessments of the state of compensation measures, wpd windmanager relies on GIS-supported programs. This enables the team to keep an eye on the big picture, even in the open countryside. In this way, we can determine at an early stage whether the relevant measures require special nurture, whether management contracts and specifications are being observed or whether actions are required to prevent a stoppage and if so, what actions.

However, a potential stoppage and the costs associated with it should not be the only incentive for wind farm operators. The state of compensation areas can be of decisive importance even beyond the roughly 20-year operating life. “If the measures have been well maintained, they can be credited towards later repowering in some cases”, Rohde-Gartmann continues.

A further reason to take another, closer look at the C&R measures and if necessary, make adjustments. That will please not only the regulatory authority, the operator and the operations manager but also the black stork, red kite or the bats.

*Overview of C&R measures from the GIS program*



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