Insights into the industry and the company || April 2025

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wpd
think energy

2024

Record approval year 2024 –

both in Germany and for wpd

The crucial expansion pathway for meeting climate targets defines an installed capacity for onshore wind of 115 gigawatts (GW) by 2030. The departing government took office with the objective of injecting new, significantly more ambitious momentum into the energy transition. This paradigm shift is noticeable! For onshore wind, we are seeing simplified procedures and significantly more approvals.

For example, no fewer than 14 (GW) of new onshore projects were approved in Germany last year. This means that overall the volume of approvals has more than trebled within four years. The emerging trend gives us good reason to expect a significant rise in the number of new systems commissioned in the coming years.

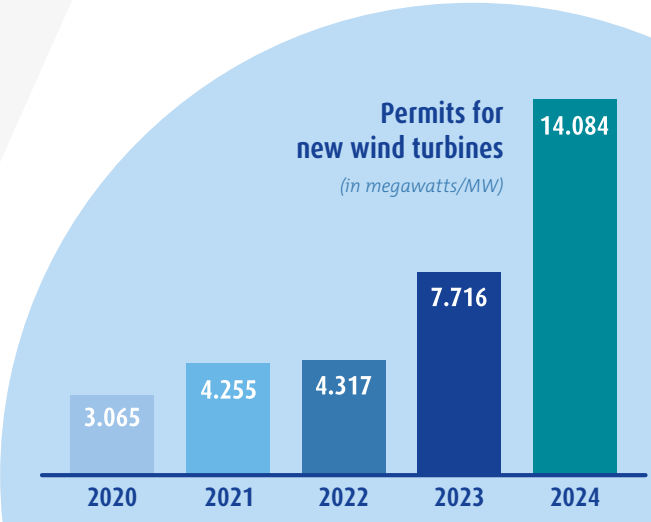
These 14 GW are synonymous with an increase of 85% over the previous year of 2023 in which the second highest number of approvals were issued comprising more than 7.7 GW. The record year was 2016, with almost 9.1 GW. Until now.

With the new record number of approvals, a correspondingly high volume of generating capacity for renewable energy will now be put out to tender. The 14 GW equates to around 2,400 new wind turbines. Even last year, the Federal Network Agency's invitations to tender resulted in contracts being awarded for 1,890 turbines with a capacity of 10,996 MW. This, too, was a new record which underscores the new dynamism in the sector and proves the efficacy of the political framework.

With an onshore wind pipeline in Germany of over 15 GW, wpd can build on an outstanding foundation for its project development. Of this pipeline, 840 MW are already approved. A record in the history of wpd.

210 MW are currently at the construction stage. For example, the Klein Süstedt wind farm in the Lower Saxony district of Uelzen with a capacity of 22 MW is due to come on stream this year.

Last year, renewables achieved a record share of net electricity generation in Germany with a figure of 62.7 percent. Wind energy was once again the most important source of electricity in 2024, contributing 33 percent to public electricity generation. Nevertheless, the expansion of wind energy is still lagging behind the targets set. The momentum gained from the recent political measures to speed up the expansion must be retained and carried forward even after the elections to the Bundestag. The latest data analyses show that thanks not least to the significantly shorter approval processes, meeting the target defined in the Renewable Energies Act (EEG) of 115 GW of onshore wind energy by 2030 appears to be realistic.



In 2024, new permits were issued for 2,405 wind turbines with a total capacity of 14,056 MW. This is by far the highest volume of permits in the history of wind energy expansion in Germany.

Source: FA Wind und Solar (2024)

Removal of the old transformer using a rail system

Arrival of the new transformer

Installing the new transformer

Commissioned substation with new transformer

"Over-connected" –

How the principle of overbuilding is helping the energy transition

The energy transition in Germany has picked up pace again. With the growing expansion of renewable energies, securing grid connection for new wind farms and solar parks is becoming a challenge. For example, at times the grid capacity makes connection impossible and we have to put up with long cable routes. Securing space for the electrical infrastructure such as cable routes and substations is also becoming increasingly difficult.

At the same time, practical experience shows that the yield times of onshore wind energy and solar energy are very different. During windy hours, a wind farm generates high yields while a neighbouring solar park frequently delivers lower yields. The situation is reversed on sunny days. We call this a low simultaneity factor.

That has some advantages as wind energy and solar energy complement each other extremely well in this manner.

The overbuilding of existing infrastructure offers great potential to developers. For example, very large outputs could be connected to the grid with relatively low investments for upgrading or for additional measurement and control systems.

What's more, it makes sense to "overbuild" substations and transmission grids. Overbuilding here means "over-connection". More power is connected than the grid connection point can actually transmit.

Overbuilding creates a quantity of energy that cannot be used due to actual overloading; this is referred to as "curtailment". That may not seem to make much sense at first sight but extensive studies show that the curtailment is only low even for very high degrees of overbuilding.

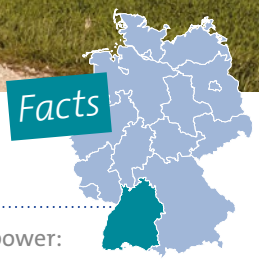
Currently this still poses challenges of a legal nature as the grid operator is currently obliged to take the entire quantity of renewable energy generated. Ways of solving this problem are currently being discussed.

wpd is currently realising the first wind/solar hybrid project in the company's history in Saxony-Anhalt in its Gerbstedt project. A separate substation was built for the wind farm in 2021 which is to be expanded from its current 26.4 MW to 32.6 MW. In future, the plan is for this grid connection point to also accommodate the Gerbstedt solar park with a further 45 MW which would bring the feed-in power connected there to almost 78MW. The substation was expanded last summer with this in mind and it was given a larger transformer; the transmission power of the grid connection is now 63 MVA or 58.3 MW. This was the precise output defined with the grid operator as the so-called "agreed connection power" which means that with 78 MW of installed power, the overbuilding of the hybrid park is approx. 33.6%. In spite of this high overbuilding, wpd's solar project team has calculated that the feed-in power will be reduced by less than 2% of the solar park's yield. The wind farm will be able to continue feeding in its full power due to its grandfathering rights. Work on constructing the solar park is due to begin in the spring of 2025.

The grid operator Mitnetz has already agreed to the overbuilding, so the commissioning of this first wind/solar hybrid project from wpd will mark the completion of an exciting chapter in wpd's history.

wpd realises agrivoltaic project in Veringenstadt

Agrivoltaics describes the dual use of land for cultivating crops and generating green electricity. In Veringenstadt in Baden-Württemberg, wpd has implemented what is currently one of the largest agrivoltaic farms in Germany in collaboration with three organic farmers. Grain and green fodder, in particular, are to be cultivated between the panels with a total rated output of 8.5 MWp. The winners include not only climate protection but also the farmers who can continue to generate agricultural income while benefiting from lease revenues



Rated power:
8,5 MWp

Location:
Baden-Württemberg

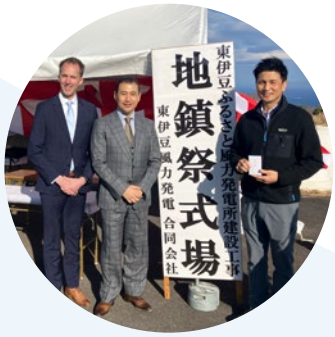
Start of construction:
Q4 2024

Copenhagen calling: wpd at WindEurope 2025

The industry gathering of the international wind energy sector comes around again in Denmark's capital of Copenhagen from 8 to 10 April – the WindEurope Annual Event 2025. Alternating with Bilbao – and with Madrid as from 2026 – more than 500 exhibitors come together every year to swap notes on the exhibition stands besides a highly fascinating programme of presentations. Once again, wpd is represented in Hall D, Stand F16, and the team is looking forward to great conversations with familiar faces and new business contacts.

Cornerstone laid for Japanese Higashi Izu project

At the end of February in Japan, wpd laid the cornerstone for the construction of the company's first Asian wind farm outside of Taiwan. The project location for the three turbines, each with an output of 3 MW, is located around 120 km as the crow flies south-west of Tokyo on a mountain ridge in difficult terrain with inclines of over 20%. The associated challenges will require the deployment of special equipment for deliveries and construction. The project is being planned and built by wpd together with Japanese partner GPSS. The project also comprises the construction of a substation for grid connection which is scheduled for February 2026.



More green electricity for a more sustainable economy

wpd has established itself as a strong partner for Power Purchase Agreements (PPAs), agreements for the direct supply of electricity. A PPA was recently concluded for the first onshore Licata project realised by wpd in Italy with LyondellBasell (LYB), a global leader in the chemical industry. The wind farm is situated on the south coast of Sicily and with its total capacity of 30 MW, it will support LYB in conducting business in a more climate-friendly, economic manner. In February, the PPA team at wpd was able to sign a further agreement for the Lautlingen Süd PV project situated in the Swabian Alb region. The purchaser of the green electricity from the 9.8 MWp project is Currenta GmbH which operates the North Rhine Westphalian Chempark (Chemical Park) at the three locations of Leverkusen, Dormagen and Krefeld-Uerdingen.

Another great wpd result in the annual rubbish collection scheme

Last year, wpd's teams once again set out to collect rubbish on lakesides, waterways, in woodlands and parks, on beaches or around their office buildings. In 2024, it all added up to a great result. Almost one and half tons or 1.450 kilograms of rubbish were collected and professionally disposed of. But it wasn't just rubbish that was collected. The team from wpd Chile took up the spontaneous request of park authorities and instead of rubbish they collected dead wood in order to lessen the danger of forest fires which had risen due to climate change.

wpd Polska at the country's most important energy conference

The 40th EuroPOWER & POWER OZE Conference, Poland's most important energy conference was held in Warsaw at the beginning of November last year. Traditionally, this conference brings experts, entrepreneurs and politicians together to discuss the challenges, opportunities and problems of the energy sector. One important topic of discussion was how to facilitate and accelerate the expansion of wind and solar energy in order to meet the targets set out in the EU's Renewable Energies Directive RED III. Representing wpd Polska, Agnieszka Plaska emphasised the importance of collaboration between project developers and the authorities in order to define common standards for ongoing procedures and thus make processes run more smoothly.

- photo montage of solar farm Petit Gaudron

Presumably from
August 2025
Annual production of
3.675 MWh

From chaotic waste dump to green energy –

wpd France realises "Petit Gaudron" PV project

Climate change is having an ever greater impact on our surroundings. Natural habitats for wildlife and living conditions for humans are changing across whole countries, regions and areas. France is no exception to the rule. According to the report published at the beginning of the year by the state weather service Météo France, 2024 was one of the hottest years ever recorded in France. At the same time, it had one of the highest rainfalls since records began. Weather extremes are continually setting new records, and action is required.

In the south-west of France, the French wpd team is making a further vital contribution to this effort with the "Petit Gaudron" PV project. The commune of Saint-Mard situated in the Nouvelle-Aquitaine region has not yet hit the targets set by the government and laid out locally in the regional energy development plan.

The wpd project is an important component in the local and regional development of the photovoltaic sector in order to guarantee a balanced mix of renewable energy alongside wind energy.

From a topographical perspective, the location of the project presents no major challenges as residential developments start more than 500 m south-east of the site. The site measuring more than 3 hectares is located on a disused quarry that became overgrown once no longer in use. Now the site is being upgraded, not just for the purpose of generating energy. For a long time, it was used for the illegal dumping of waste but thankfully a stop has now been put to this practice.

The French solar team of wpd launched the planning process together with the commune of Saint-Mard a good five years ago. After environmental studies of more than a year between 2020 and 2021, the building permit application was submitted to the municipality. Celebrations were in order when the permit to construct the solar park was finally obtained in July 2022. There was a grid connection point in the direct vicinity of the project at the Boisseuil source station, 1.9 km distant.

With an output of 3.09 MWp and an estimated average annual production of 3,675 MWh, "Petit Gaudron" project will contribute to the decarbonization of the region in the future.

To enhance the ecological value of the site, and offer wildlife a genuine refuge, feeding site and stopover point, the project was designed in such a way that a hedge 5 metres in width containing local shrubs was planted outside the fence.

The starting gun was fired at the end of January to prepare the site for construction to begin. As soon as utility connections and access roads to the site have been completed, installation of the frames is set to start in May 2025. If everything goes to plan, the first green energy will be fed into the grid in August. Reason enough to celebrate the inauguration of a further important project in the energy transition in the commune of Saint-Mard in September.

Did you know?

*France added almost **4.7 GW** of new solar capacity in **2024**. This is an increase of **1.6 GW** over 2023 and a new record. **74%** of the new systems were **rooftop panels** and **26% ground-mounted.***

Source: SolarPower Europe (2024): European Market Outlook for Solar Power 2024-2028

50 MW
newly installed in France in 2024

42 wind farms
realized by wpd in France

Number games –

wpd passes significant milestones in France

The number 42 has a special meaning for wpd France: that is how many wind farms the team has already implemented in the country. With the commissioning of the 42nd wind farm in the centrally located Département Vienne, the threshold of 600 MW of wind energy installed by wpd in France was also exceeded. With the recent commissioning of the 14.4 MW project in Haute-Vienne and another 12.6 MW wind farm in the neighboring Département Vienne, wpd has reached a total installed capacity of 616 MW. A great success with which wpd France confirms its position as a key player in the French energy transition!

Project activities will be further expanded. A total of almost 50 MW was newly installed in 2024, and the aim is to build on this in 2025. Three further projects with a total output of 41 MW are under construction, two of which are to be commissioned before the end of this year. In total, wpd France has 2.3 GW of wind and solar projects in development, of which 425 MW have already been approved and 320 MW are in various stages of the permitting process.

Above all, experience and foresight have a positive impact here. After more than 20 years of successful project work in the country, wpd France knows how to implement renewable energy projects as efficiently as possible. Whether it's over 600 MW of projects completed or a pipeline of 2.3 GW of wind and solar parks in the planning phase, green electricity must not only be fed into the grid but also to the consumers. The business world in particular has recognized the importance of power purchase agreements (PPAs) worldwide. These contracts for the direct supply of green electricity generated from renewable sources to energy-intensive companies are one of the major topics of the energy transition.

And here, too, wpd France was able to celebrate a particular success in the year it entered the PPA business. In cooperation with the PPA team at wpd Luxembourg, the first PPA was concluded: for the French data centers of the US company Equinix, the world's leading provider of digital infrastructures. The agreement is the largest wind power PPA ever signed in France and covers seven wind farms with a production of 300 GWh per year. Further PPAs have already followed or are in the process of being implemented. Thanks to the experience and know-how of its PPA experts, wpd is also an important partner in France for implementing climate targets.

> *At wpd, we can build on excellent coordination between all parties involved in a project, which always starts at a very early stage. In addition to our experience and expertise, this is certainly one of the reasons why significantly fewer objections to our projects are raised than is usually the case in the industry.*

Grégoire Simon
Managing Director wpd France

energy grid service

www.energygridservice.de

Full power – less downtime

How can the efficiency of the electrical infrastructure for renewables be boosted?

Benedikt Reckemeyer, Vertriebsleiter bei energy grid service (egs)

To find out, we interviewed Benedikt Reckemeyer, Sales Manager for energy grid service (egs).

Benedikt, you have been Sales Manager for egs for almost two years, and you know the market inside out. You offer services for operators of wind energy and photovoltaic systems. What makes egs special?

We see ourselves as an integrated service provider for renewable energies and a partner for the entire electrical infrastructure. Our strength lies in our combination of technical know-how, comprehensive service expertise and flexibility. We don't just offer standard services but also individual solutions, from servicing electrical infrastructures, control technology to the technical management of substations and maintenance of PV systems.

What specific services do you offer for the electrical infrastructure?

Our portfolio comprises cable measurements for commissioning, troubleshooting on the grid, maintenance of transfer stations and transformers, DGUV-V3 tests, protective relay inspections and a 24/7 on-call service. We also provide environmentally-friendly disposal of SF6 gas.

What can egs offer for photovoltaic systems?

We focus here on services for ground-mounted parks. We assume the operator's responsibilities under the VDE standard, conduct visual inspections, maintenance and DGUV-V3 inspections. This means we don't just cover the PV sphere but also take care of the entire electrical infrastructure.

How do you support your customers in the sphere of control technology?

With our certified, proven EGP controllers (EGP = energy generation plant), we offer innovative solutions for controlling grid connection points. These controllers are ideal for wind farms and solar parks, compensation systems and combined heat and power plants. They are compatible with various grid levels and offer functions such as reactive power control, remote maintenance and realtime data communication. The objective is efficient feed-in and simple integration.

What services do you offer for substations?

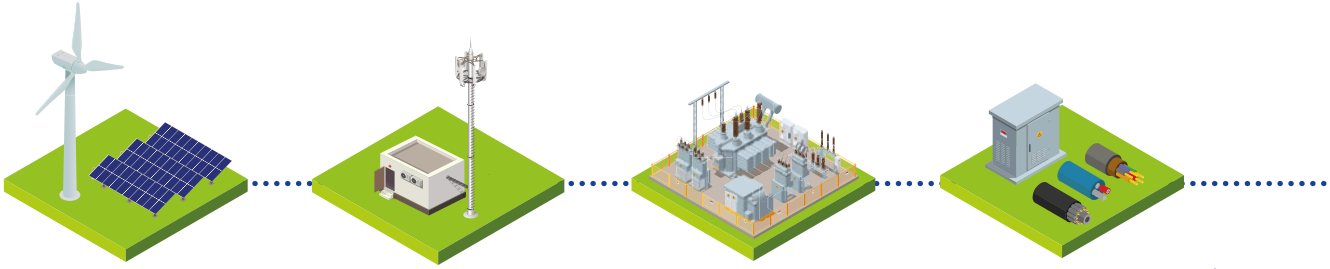
We take on the technical management, including 24/7 remote monitoring and servicing. Our preventive approach comprises inspections, transformer testing and a comprehensive on-call service for maximum operational reliability. We now have 87 substations under full-service management, and demand on the market is currently enormous.

What can you offer operators of wind turbines?

Regular inspections, assumption of operator responsibility, DGUV-V3 and protective inspections or gearbox videoscopes to prevent damage. Our aim is to minimise downtime and boost efficiency. Demand for our services is high and for that reason we have significantly expanded our team on a technical level.

Finally: What is the secret of egs' success?

Our customer proximity, technological competence and our aspiration to always be one step ahead. We offer not just service but also sustainable solutions for a secure, efficient energy future. That's what we're working to achieve in a team with a good mix of experienced specialists and "young bucks". It's so much fun to be part of the energy transition here!



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