

Energy Assessment

Type Testing +
Technical Expertise

Due Diligence

Test Site Operator

Type Testing + Technical Expertise

References

windtest grevenbroich gmbh

Company Profile

More than 18 years of experience in an industry that is only little older. Since 1996, windtest grevenbroich gmbh (wtg) provides predominantly manufacturers, planners and operators, but also authorities, the finance sector and private individuals, first-class services in the areas of planning, development, optimisation, quality assurance and consulting in the technological and economic advancement of wind energy – both on the domestic market and abroad.

Innovations and optimisation measures for turbines, PV systems, components, CHPs, combustion engines or complete wind and PV farm configurations in relation to grid requirements are assessed in every detail, measured and planned by more than 35 experts – either on the company-owned, one of the worldwide largest test field for inland wind turbines in Grevenbroich, or locally at the customer's sites. Thus wtg makes a considerable contribution to the improvement of the technology and efficiency, the acceptance and the export opportunities of wind energy farms.

The measurements and expert reports of wtg-specialists provide customers with the very certainty they need for planning and implementation of wind energy projects. After all, reliability is our highest principle. We are also involved in numerous national and international bodies, ensuring that our staffs always have their fingers on the "pulse of time". On the other hand, their work results frequently affect statements, standards, or the legislation.



windtest grevenbroich gmbh

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The shareholders of the windtest grevenbroich gmbh are:

- 25,0 % Federal state of North-Rhine-Westphalia (NRW),
represented by NRW BANK
- 37,5 % RWE Innogy GmbH (utility)
- 12,5 % District of Neuss (authority)
- 12,5 % City of Grevenbroich (authority)
- 12,5 % ee energy engineers GmbH (TUEV Nord group).

The diversified shareholder structure (utility operator, private company, municipalities) guarantees the independence of our services.



Test site Grevenbroich

Our Quality References

- **Operator** of an **onshore test site** for inland wind turbines in Germany
- Exclusive partner for all measurement services for the largest **onshore test site in Europe** in the Netherlands
- DAKKS accredited according to **IEC 17025**, signed the Multilateral Agreement (MAL)
- **Independent** (referring to the shareholder structure of windtest grevenbroich gmbh)
- Full Member and Chairwoman of **MEASNET** Group (international organization)
- Member of **EWEA** (European Wind Energy Association)
- Member of **AWEA** (American Wind Energy Association)
- Member of committee for standardisation **FGW** (national organization)
- Member of working Committee Noise Emission (national organization)
- Member of working Committee Renewable Energies / Wind energy **VGB Powertech** (international organization)
- Member of Windgutachterbeirat und Sachverständigenbeirat des Bundesverband Windenergie e.V. **BWE** (national organization)
- Named Measuring Body for Sound Measurements according to §26 of the German Immission Control Law (**BImSchG**) (national organization)
- Partnerships or common projects with **universities in Brazil, Germany, South Korea** (International)

Power Performance Measurements

Since 1996 wtg realised more than 100 power performance projects world-wide as single power curve measurements or in combination with load measurements by using met masts or SoDAR / LiDAR systems.



Our experts in the field (with co-operation partner)

Our Projects (extract)

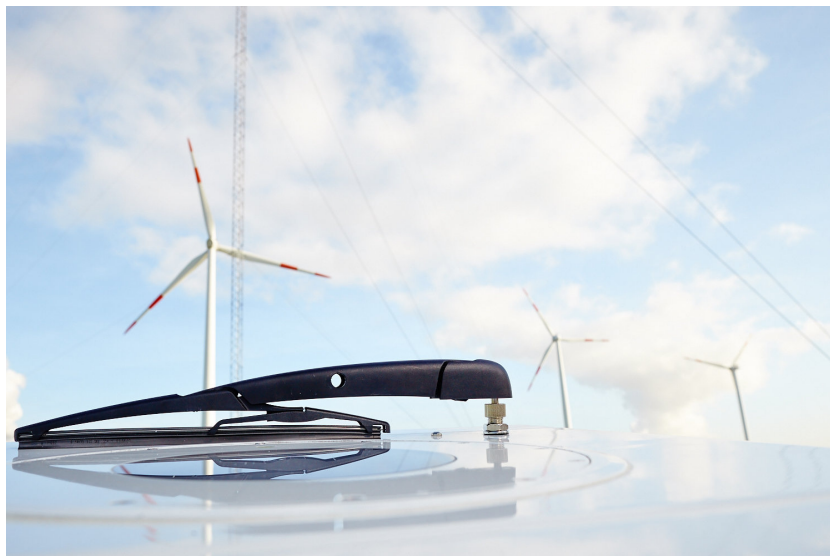
Numerous power performance measurements, in divers European countries (e. g. test field Germany, all over Germany, Finland, Estonia and Sweden) and also on international level (e. g. USA, India, China and South Korea).

Our Clients (extract)

From all over the world

- | | |
|------------------|-------------------|
| ■ DeWind | ■ Nordex |
| ■ Directtech | ■ Powerwind |
| ■ Enercon | ■ ReGen Powertech |
| ■ enbreeze | ■ Senvion |
| ■ Fuhrländer | ■ Siemens |
| ■ Gamesa | ■ Suzlon |
| ■ GE Wind Energy | ■ Tozzi |
| ■ Goldwind | ■ Vensys |
| ■ Lagerwey | ■ Vestas |
| ■ Leitwind | |

Power performance measurement with remote sensing devices – LiDAR Systems



Remote sensing device – LiDAR

Remote sensing device [LiDAR-System]

- wtg uses also remote sensing devices according to the new draft of the IEC 61400-12-1 ed.2
- The remote sensing devices are validated before and after the measuring campaign at the validation station on the test field in Grevenbroich/ Germany
- Experience with remote sensing devices since 1998 – long time partnership with LiDAR- and SoDAR distributor GWU-Umwelttechnik GmbH

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