



Industrie Service

**Choose certainty.
Add value.**

Assessment of Turbulence and Extreme Winds by TÜV SÜD – Critical for the Right Choice.

Wind speed, the crucial parameter for energy yield, can be both a blessing and a curse for a wind energy converter (WEC). Given this, a detailed analysis of turbulence intensity, as the variance of wind speed within a certain measurement interval is known, and the statistical investigation of extreme wind loads at a certain site can prove critical for selecting the WEC type best suited to the site in question.

As TÜV SÜD's experts, we gladly provide all the theoretical and practical support you need.

In addition to evaluating wind measurement data and determining turbulence prevailing at the site and/or long-term extreme wind speeds, we also offer structural analysis of your WEC (tower, foundation) design in accordance with the manufacturers' instructions. Our results can be submitted

to the building authority for obtaining the required approval. In addition, we review the required minimum distances of the individual WECs in the wind farm on the basis of the respective wind zone (as per DIBt, IEC). This ensures that the stresses and strains acting on the individual WECs do not exceed the defined limits.

At TÜV SÜD, we have long-standing international experience in the assessment of turbulence and extreme winds. We support your project with our full expertise, thus minimising risks and improving the efficiency of your wind farm project. Our first-class reputation, recognition and acceptance throughout the world are built on our technical expertise, high standards of economic and ecological project realisation, impartiality and objectivity. We look forward to hearing from you.



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www.tuev-sued.com/windenergy

Choose a Qualified Partner for the Assessment of Turbulence and Extreme Winds: TÜV SÜD.

TÜV SÜD Services

- Proof of free and characteristic environmental turbulence and calculation of the induced turbulence intensity based on the configuration of the wind farm
- Determination of the wind zone as per DIBt, IEC (IEC 61400-1 ed. 2 and 3)
- Identification of the determined base and annual mean wind speed
- Calculation of extreme wind speeds (1-year and 50-year mean of both extreme wind speeds and wind gusts)
- Preparation of a stability report in accordance with DIBt guideline, Eurocode 1 and the recommendations of Germanischer Lloyd
- Alignment of the results with the data measured in wind site assessments and/or included in a worldwide data pool collated at meteorological ground stations
- High-precision calculation of turbulence and extreme winds on the basis of available data derived from site-specific wind measurements
- Theoretical estimate of turbulence and extreme winds based on the data from meteorological stations in the vicinity

We provide international services. Call us!

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