

Wind Resource Prognosis

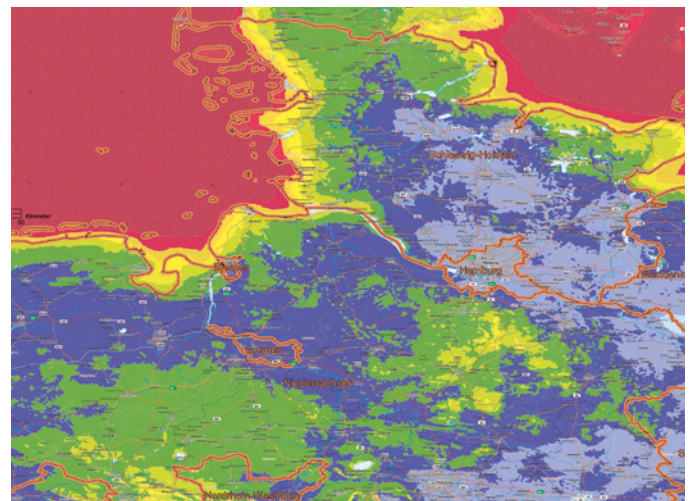


The wind potential at a proposed wind farm site is the basis for estimation of expected energy yields. Wind potential maps allow for precise assessment of strong and low wind areas within a proposed wind farm area and also serve as basis for the determination of suitable sites for wind measurement campaigns.

For areas where high density of information on wind conditions is available, such as in Northern Germany, TÜV NORD determines the wind potential on basis of long-term time series of local weather stations and production data of wind turbines in the vicinity of the site.



In areas without or with insufficient information on wind conditions, wind potential can be determined by mesoscale modeling, using global climate data as input. These data contain information about the wind conditions at higher altitudes. In addition, information on near-surface wind conditions can be used from a 100 km distance to transfer them on the planned wind farm site, taking mesoscale effects into account.



Example for a wind potential map of Northern Germany modeled by TÜV NORD:

- Area: 340 x 340 km, horizontal resolution 250 m
- Horizontal resolution possible up to 50 m for all hub heights
- Calibration using wind measurement data and turbine production data
- Determination of the mean wind speed and energy flux density at hub height
- Determination of wind frequency distribution at hub height

Our site assessment and environmental services are tailored and constantly extended in accordance to the needs of our customers and their projects. This page and the following pages show extracts of our main services. Contact us for further details and support.