



THE FUTURE IS RENEWABLE

AT THE FOREFRONT OF WIND RESOURCE ASSESSMENT

Nayxa Energy Services
P.O. BOX 47001
28080 – MADRID
SPAIN
TEL.: +34 625 84 36 63

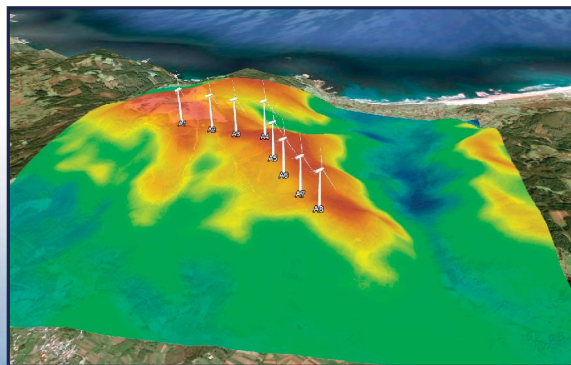
www.nayxa.com



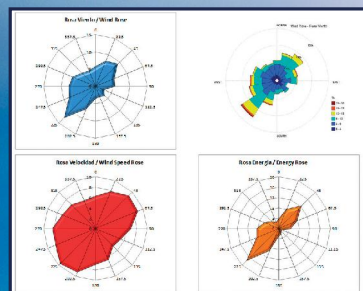
NAYXA

Nayxa is a leading independent consultancy company in the area of wind resource assessment and site assessment. At Nayxa we work with commercial software such as WASP or WindFarmer but also with the state-of-art when it comes to in-house wind software development. A continuous research and development process is carried out at Nayxa resulting in the codification of our own tools and programs.

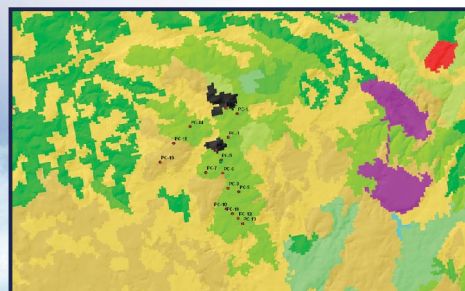
At Nayxa our philosophy of working is directed and related to a permanent contact with our clients, personalizing at any moment every single project. At Nayxa we have worked as wind resource consultants in more than 20 countries all over the world, developing more than 10,000 MWs of wind power projects. We are willing to face new challenges and projects and help our clients develop their wind farms.



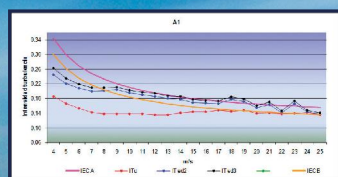
Wind field and lay-out of a wind farm



Wind statistics



Roughness map of a wind farm project



Effective turbulence intensity according to IEC 61400-1



Wind index of Spain 2012

SERVICES

WIND RESOURCE MEASUREMENT

- Supply and installation of meteorological masts according to IEC and MEASNET standards.
- Supply, advice and installation of all kind of wind/meteorological sensors.
- Design of wind resource measurement campaigns.
- Wind data filtering and processing including Sodar data.
- Maintenance of meteorological masts and monitoring of the measurement campaign.
- Monthly reports to enable a correct tracking of the measurements (>99% availability guaranteed).

WIND FARM LAYOUT DESIGN

- Wind resource assessment of potential interest areas.
- Management of restrictions affecting the site.
- Selection of the most adequate wind turbine model for each project.
- Optimization of the wind farm lay-out according to IEC 61400-1 specifications.
- Calculation of the wind energy produced along with the uncertainty.

CARTOGRAPHY AND ROUGHNESS

- Map making of cartographic maps in CAD/GIS and WASP/CFD compatible formats for any part of the globe.
- Elaboration of WASP/CFD compatible roughness maps for any area within the World.

WIND RESOURCE ENGINEERING

- Calculation of losses due to wind sector management, wind hysteresis, noise restrictions, nearby forests or power limitation.
- Wind shear advanced calculation intended to reduce uncertainty.
- RIX correction methodology in wind farms with more than 1 met mast.
- Advanced MCP techniques including all available sources of reanalysis data worldwide.
- Reconstruction / filling of missing data with special techniques.
- Consultancy service in Due Dillgence processes, public tenders and wind farm dealing.
- Monthly wind index service.
- Electromagnetic interference studies, EMI.

SITE ASSESSMENT

- Site assessment according to IEC 61400-1 guidelines for each wind turbine position within the wind farm.
- Specific and detailed calculation of the Vref parameter (IEC class), taking into account a set of 20 different methods.
- Calculation of the effective turbulence intensity (IEC sub-class), according to S. Frandsen's formulas and complex terrain specifications.
- Service of permanent contact with the wind turbine manufacturer with the scope of verifying the conditions of the operation of the wind turbines.

