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Renewables- Wind Turbines CFD Capabilities Overview

RENEWABLES – WIND TURBINES
CFD CAPABILITIES OVERVIEW

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Navier limits wind energy project risks with high fidelity CFD simulations by providing clients with invaluable performance data, upfront, for both horizontal and vertical axis wind turbines

The installation of both onshore and offshore wind turbines is growing year on year, with Megawatt-sized turbines and large wind farms completely revolutionising the wind energy industry and making it a viable source of renewable energy.

The growth in this sector means that there is an increasing demand for high fidelity numerical models that can help limit the uncertainties and risks associated with wind energy projects.

Navier's CFD consulting services can deliver clients with invaluable data, upfront, for both horizontal and vertical axis wind turbines (HAWT and VAWT) on aerodynamic performance of individual blade geometries, prediction of power output coefficients, stall regulation, and wake interaction effects.

Navier have the expertise and experience to help you match the demands of the renewable energy industry and maximise the energy potential from wind turbines by identify when, where and how CFD can be leveraged to provide the best return on investment for wind turbine projects.

Key Outputs:

- Aerodynamic performance of the blade definitions.
- Blade optimisation.
- Power coefficient versus tip speed ratio for different configurations, including varying blade pitch angles.
- Ensure stall regulation to limit power output for fixed geometry wind turbines in excessively high wind speeds.
- Wind turbine placement optimisation in farm array to maximise the generated power while minimising the cost of installation.
- Compute aerodynamic loads.
- Predict blade flutter.
- Wake interaction effects on the environment and buildings

To find out more, contact us:

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