# ECN Wind Nacelle LiDAR Services

ECN Wind
PO Box 1
1775 ZG Petten
The Netherlands

www.ecn.nl/expertise/
wind-energy/tests-measurements

windenergy@ecn.nl
T: +31 (0) 88 515 4500

ecn.nl

## ECN Wind Measurement Services

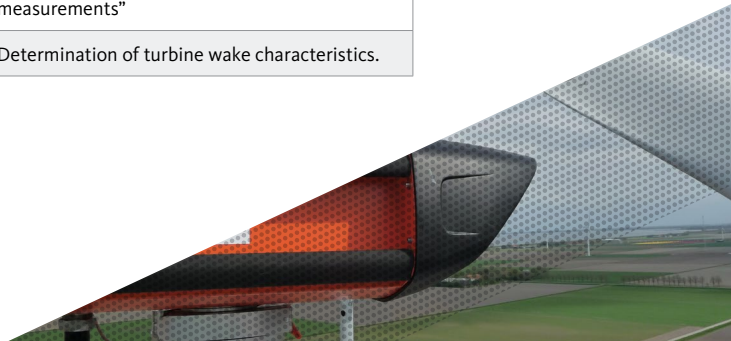
ECN brings innovative technologies and methods for measuring in and around wind turbines and wind farms to your site. Measurements are performed on your onshore/ offshore site under a wide range of weather conditions. Along with those measurements come the vast experience and proven track record of ECN on prototyping/ testing wind turbines and measurements as well as measurement systems. We will put that knowledge to work in order to provide the most adequate measuring program, fitting your needs. The results of our measurements will contribute to the solution of your problem.

## Added value ECN Nacelle LiDAR campaign

Organizing a nacelle LiDAR based measurement campaign with ECN is in many aspects valuable. For instance, it has been demonstrated that power curve and uncertainties are very much comparable to those achieved according to the IEC standard. Together with yaw error detection this opens up for performance and nacelle anemometry validation. Applying this brings about optimized yield and O&M procedures. Here, all is done without the need for a met mast (except for calibration) and with an extended measurement sector resulting in quicker campaigns. When extrapolated to farm level including wake characterization, the potential of sector management improves the operation of wind farms.

## ECN Nacelle LiDAR Products

| Product | Description |
|---|---|
| Power Performance | Determination and validation of turbine's power performance |
| Yaw Misalignment | Determination of static yaw error of a turbine |
| Turbine Control | Feedforward control based on nacelle LiDAR input |
| Sector Management | Optimized wind farm control based on wake induced sector identification |
| Nacelle Anemometer Verification | Validation of nacelle anemometer performance. Verification of the nacelle transfer curve (NTC). |
| Calibration | Calibration of a nacelle anemometer using ISO 170125 accredited "meteorological measurements" |
| Wake Characterization | Determination of turbine wake characteristics. |



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