



FeatherEdge®

Silence is Golden

Biome Renewables' FeatherEdge® serration technology delivers industry leading noise reduction results in IEC field test campaign

In summer 2023, Biome piloted its FeatherEdge® serration technology on a 3MW-class turbine in France. The technology is directly inspired by the trailing edge geometry of an owl's wing. The campaign was overseen by Deutsche WindGuard GmbH (DWG) who carried out near-field measurements in accordance with IEC 61400-11 (ed. 3). The test was conducted on one turbine over the course of a month, and constituted a before and after scenario, with the FeatherEdge being compared to a standard OEM serrated trailing edge (STE). The OEM STE was tested first, followed by FeatherEdge.

The results show industry-leading noise reductions:

Broadband (10Hz-10kHz)

- 10m Standardized: A noise reduction **3.4 dB(A)** below that of the standard OEM STE

Medium-Low frequency (Below 1000Hz)

- 10m Standardized: A noise reduction **6.0 dB** below that of the standard OEM STE

A detailed account of rotor speed and power showed that the turbine behaved in the same way throughout the test campaign. As such, any change in noise were due to the application of FeatherEdge. An average uncertainty for both measurements was recorded at between 0.6-0.7 dB, well within acceptable levels. Results were standardized to 10 meters above ground from hub height in the highest wind speed bins measured (7 m/s).

These results signal market-leading noise reductions in the wind industry, and positions customers to utilize FeatherEdge technology in many ways. Please contact info@biome-renewables.com to find out more.

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