

Wind Energy at NREL

Golden, Colorado



NREL's National Wind Technology Center is the nation's premier wind energy technology research facility. The NWTC's specialized facilities and personnel provide technical support critical to the development of advanced wind energy systems. From the base of a system's tower to the tips of its blades, NREL researchers work side-by-side with wind industry partners to increase system reliability and reduce wind energy costs so that wind energy can increase its contribution to our nation's energy portfolio.

Our research and test facilities are unique to the nation. Its location at the foot of the Colorado Rockies provides diverse and robust wind patterns ideal for testing.

Research Capabilities

- Design review and analysis
- Software development, modeling, and analysis
- Systems and controls analysis
- Utility integration assessment
- Wind resource assessment and mapping

Test Facilities

- Dynamometer Testing—225-kW and 2.5 MW dynamometers to conduct a range of drivetrain system tests that cannot be duplicated in the field.
- Structural Testing—Facilities accredited by A2LA to perform tests in accordance with IEC standards on full-scale wind turbine blades.
- Field Testing—Test pads and technical support to test manufacturer's prototype machines.
- Controls Testing—Advanced research turbines test new control schemes and equipment for reducing loads.

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NREL
**National Renewable
Energy Laboratory**

Innovation for Our Energy Future

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