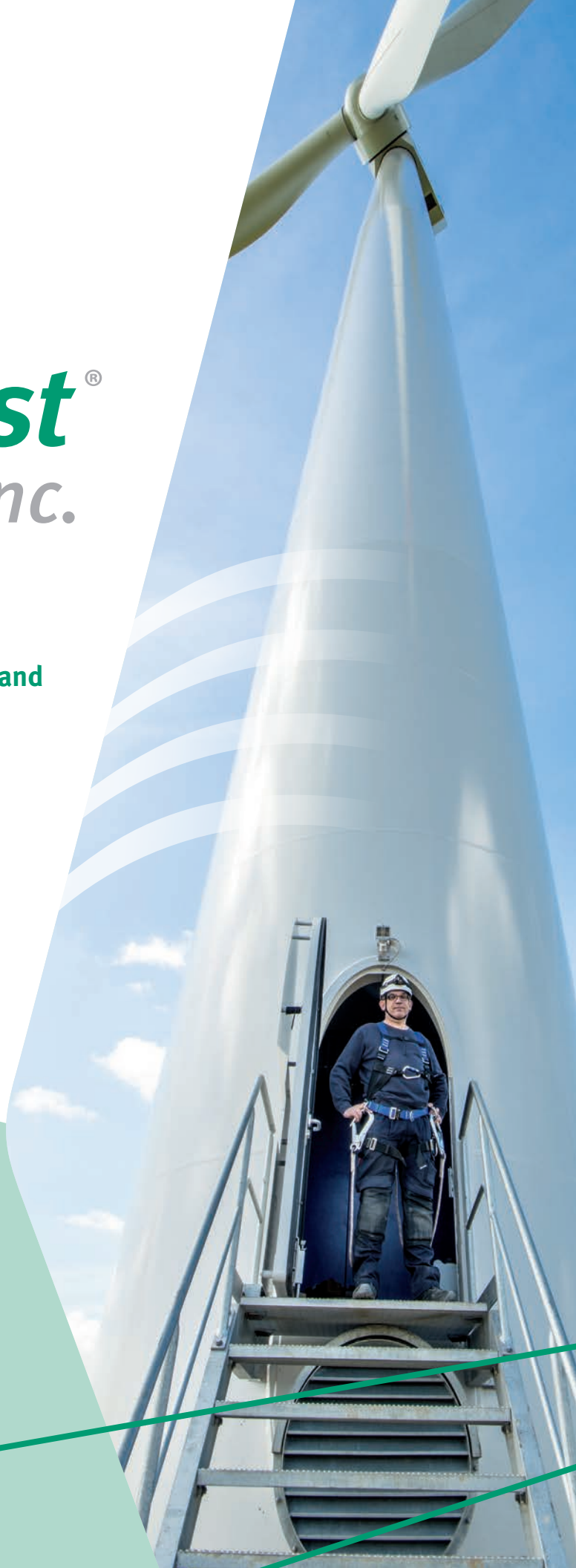




precision measurement, testing, analysis and  
validation for wind energy manufacturing,  
development and operation

*quality by  
any measure*



# WE GENERATE THE PROOF YOU NEED TO GENERATE WIND POWER

Whether you're a turbine manufacturer, investor, lender, developer, wind farm owner or grid operator, you need to prove the validity, quality, efficiency, safety and long-term return on investment of your project.

**windtest north-america provides the high-quality, comprehensive testing, measurement, analysis and validation you need to move your project forward.**

Technical expertise is the foundation of what we do, but quality is what sets us apart.

From our engineers to field technicians, support staff to leadership, "quality by any measure" is a mantra. Regardless of the type of project or which of our areas of expertise come into play, we hold ourselves to the highest standards for quality and integrity.

It's how we live. It's how we work. And it's why you can rest assured you'll be able to make decisions based on the most precise data and information.

**By any measure, windtest north-america will be a reliable partner for your wind energy project.**

*quality is what sets us apart*

# WHY WINDTEST NORTH-AMERICA?

## Experienced

Our parent company, windtest grevenbroich gmbh has been providing data and analysis for the wind energy industry for more than 25 years around the world, and for more than 15 in North America. We've completed hundreds of projects involving thousands of megawatts of installed capacity.

## Accredited & Highly Qualified

windtest grevenbroich gmbh is one of the few measurement organizations in the world that is certified by IECRE and holds the MEASNET seal of conformity. windtest holds several national and international certifications and accreditations, and we are accredited in accordance with ISO/IEC 17025.

## Advanced Technology & Equipment

We use the latest processes and most advanced measurement and testing equipment, software and technologies in the industry. We also have several Fault Ride Through (FRT) containers and can get one to your site quickly.

## Flexible & Responsive

Sometimes new situations or requirements arise over the course of a project. Thanks to our specialists' abilities and our advanced technologies and equipment, we can adapt and respond to your needs quickly, and ensure your project stays on track for your time to market.

## Engaged

Our specialists are members of several national and international working committees like the International Electrotechnical Commission – Renewable Energy and several MEASNET expert groups. We are always prepared to apply the latest processes and technology advancements your project.



## PROJECTS IN NORTH AMERICA More Than 100

Acoustics/Noise  
Power Performance/Loads  
Grid/Power Quality  
Blade Alignment

## PROJECTS WORLDWIDE

**3,750+** Site/Energy Assessment

**1,500+** Acoustics/Noise

**420+** Grid/Power Quality

**320+** Power Performance/Loads

## Who We Work With

- OEMs
- Developers
- Wind Farm Owners/Operators
- Investors/Lenders
- Municipalities
- Grid Operators
- Colleges/Universities

# EFFICIENT, SAFE & WIND ENERGY THE WINDTEST WAY

Precise measurement and testing of economic viability, site suitability, turbine performance, power quality, grid integration, stability and security are crucial to the success of a project. We engage at multiple points in the process, from turbine manufacturers' R&D to site selection, on-site operation to seamless transfer of power onto the grid. From small wind turbines to utility-scale operations, our customers rely on windtest north-america to keep their projects moving forward.

## ACOUSTICS

### Providing Sound Data

With windtest north-america:

- Turbine manufacturers have assurances that emissions from their turbines are within contractually designated ranges.
- Developers, investors and lenders have credible and reliable information that's a sound basis for decision making.
- Wind farm owners and operators get data that confirms turbines are measuring up to manufacturers' guarantees and precise immission measurements to ensure neighbors aren't experiencing excessive sound levels.

## ENERGY ASSESSMENT

### Validating Viability

You can't move turbines once they're erected. We'll help you make sure your proposed site is the right site. We complete highly accurate measurements and tests, then report everything in a manner that will make your certification and permitting processes easier.

- Wind Potential
- Yields
- Noise Immissions
- Turbulence Intensity
- Shadow Impact Prognoses
- Emission Forecasts
- Power Performance Verification (Met Tower/SoDAR/LiDAR)
- Remote Sensing System Validation

# PROFITABLE

## TYPE TESTING & TECHNICAL EXPERTISE

### Improving Designs & Minimizing Costs

It costs a lot to manufacture turbines. We'll thoroughly test and measure your prototypes so you can adjust designs and avoid unnecessary expense. We also test and monitor existing turbines, and develop customized testing protocols to collect precisely the data you need.

- Power Performance Verification
- Power Performance Measurements
- Acoustic Measurements
- Power Quality
  - › Grid Code Compliance
  - › Grid Integration
- Blade Alignment
- Mechanical Load Measurements
  - › Blades
  - › Power Train
  - › Towers
  - › Bolts
  - › Foundations

## TRAINING

### Sharing Knowledge

windtest north-america's leaders, engineers and technicians have considerable expertise in numerous aspects of wind energy. We're happy to share it through business-specific presentations and training that we offer in conjunction with Iowa Lakes Community College, Estherville.

- IEC 61400 Norms
- Project Management
  - › Measurement Campaigns
  - › Standard IEC-Compliant Certification
  - › Country-Specific Requirements
- Benefits of Accredited Power Performance Measurement
- MEASNET Power Performance Measurement Procedures
- Seminars for Industry-Required Training



# THE COMPANY WE KEEP

windtest north-america is proud to serve industry-leading clients:

- Apex Clean Energy
- BP Energy
- Caterpillar
- Chava Wind
- General Electric
- NextEra Energy
- Nordex/Acciona
- Scout Clean Energy
- Senvion
- Siemens/Gamesa
- Suzlon

## SEE HOW WE MEASURE UP

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