

National Lightning Detection Network (NLDN) for Wind Energy

Product Spotlight

The foundation for highly accurate lightning detection across the continental U.S.

A powerful force of nature, lightning can cause serious harm or damage in an instant. Vaisala National Lightning Detection Network (NLDN), part of our Xweather family of subscription based products, prepares organizations before lightning strikes by delivering scientifically accurate lightning data from across the United States in real time. Equipped with best-in-class information about the location, time, and type of lightning, organizations can make better decisions to safeguard personnel, protect energy assets, deploy resources, and minimize downtime.



Key benefits

24/7 detection with superior accuracy. NLDN detection efficiency for cloud-to-ground flashes is greater than 95%, with overall classification accuracy of 95% and median location accuracy better than 100m.

Comprehensive data without installing or maintaining a single sensor, decreasing real estate and operational costs.

A 30-year history of the highest quality lightning detection, creating a historical record or lightning data for meteorological or operational purposes.

Why Vaisala?

We are innovators, scientists, and discoverers who are helping fundamentally change how the world is powered. Vaisala elevates wind and solar customers around the globe so they can meet the greatest energy challenges of our time. Our pioneering approach reflects our priorities of thoughtful evolution in a time of change and extending our legacy of leadership.

Vaisala is the only company to offer 360° of weather intelligence for smarter renewable energy, nearly anywhere on the planet. Every solution benefits from our 85+ years of experience, deployments in 170+ countries, and unrivaled thought leadership.

Our innovation story, like the renewable energy story, continues.

Unique in its accurate differentiation between cloud-to-ground and in-cloud events, Vaisala NLDN thunderstorm detection efficiency rate is near 100%, with an event location accuracy better than 100m and timing down to the microsecond. This high level of precision and accuracy gives organizations the information they need to quickly assess risk, issue hazardous weather warnings, prepare for lower power generation, or investigate the cause of fire damage – all without maintaining a detection system or hardware of their own.

Applications:

- Earlier and more accurate detection of hazardous weather conditions to inform decisions regarding outside personnel to maximize safety while minimizing costly downtime
- Delivering input data for weather forecasting models predicting future power generation capabilities
- Analyze historical lightning trends supporting site planning activities including lightning protection system design
- Aid reliability of the power grid by providing utilities with precision lightning information to ensure networks are sufficiently robust and comply with regulatory standards
- Create lightning alerts to inform people about severe weather and lightning risks
- Enable investigation of lightning as the cause of property damage or fire

