

National Lightning Detection Network (NLDN) for Wind Energy

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



Key benefits

Modern data, modern operations

NLDN delivers the precision needed for the most modern, efficient operations. It is trusted by the leading power utilities, meteorological, and governmental organizations — including the U.S. National Weather Service, FAA, and armed forces.

Available today at no capital costs

Users achieve modern data-as-a-service efficiency without the need to purchase, install, or maintain any sensor equipment or processing systems.

Simplicity and reliability

With better than 99.99% uptime, Vaisala NLDN data has about 12-second latency and is delivered over a variety of real-time feed methods, file types, and APIs. Historical data can also be easily accessed and analyzed.

Robust and comprehensive

Unlike other solutions, NLDN offers uniform high-quality detection and accuracy across the entire continental U.S. thanks to superior technology and network design. NLDN detects more lightning with more accuracy over the continental U.S. than any other network.

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.

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.

NLDN at a glance

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.

Key features

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 for renewable energy?

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.

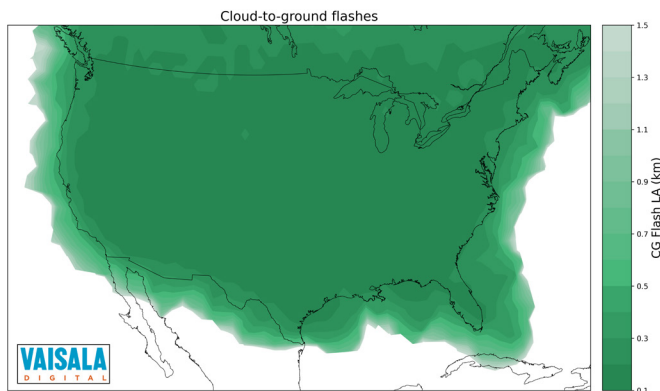
Our weather and environmental monitoring solutions for renewable energy are guided by several key priorities:

- Thoughtful evolution in a time of change
- Making renewable energy smarter at every stage
- Extending our legacy of leadership

Vaisala is the only company to offer 360-degree renewable energy solutions — from sensors and systems to digital services and actionable intelligence — nearly anywhere on the planet (and even on Mars). Every Vaisala solution benefits from our 85+ years of experience, pioneering deployments in 170+ countries, and unrivaled thought leadership.

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

NLDN Location Accuracy over CONUS



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