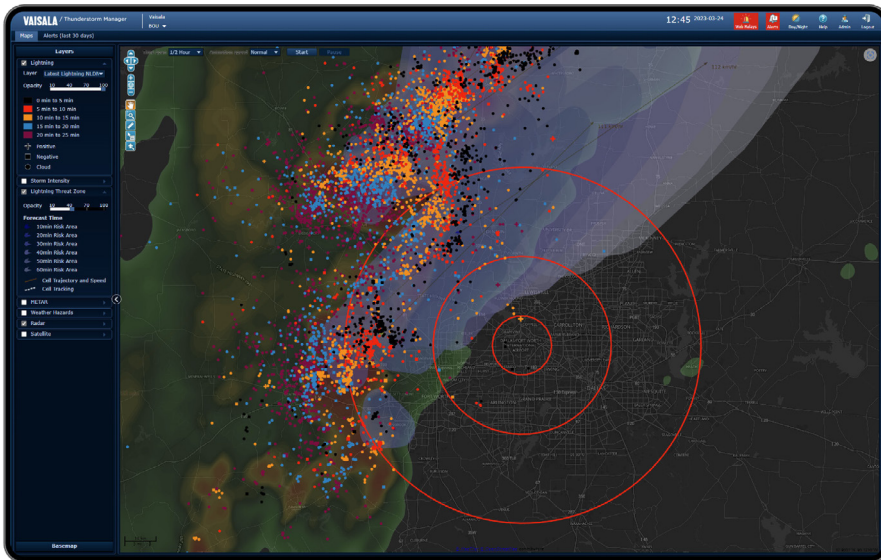


Thunderstorm Manager for wind energy

Modern software for real-time storm awareness and improved safety



Key benefits

Maximize safety, minimize downtime

Improve your situational awareness and make safety decisions with confidence with multichannel alerts, all-clear notifications, and API connectivity to your safety systems.

Anytime, all-terrain awareness

Get fast lightning alerts for any place in the world, including oceans, the highest mountain peaks, and other geographic locations not covered by radar or meteorological instruments.

Visible layers of storm insights

Quickly uncover weather information with map layers that show lightning, wind, satellite infrared, radar and more. The tropical cyclone layer shows the severity category and projected path of cyclones, hurricanes and typhoons.

Driven by the world's best data

Depend on the only lightning detection solution built on GLD360 and NLDN, trusted by the U.S. Armed Forces, National Weather Service, Federal Aviation Administration, and many large commercial organizations.

All-in-one solution with no capital costs

Monitor nearby storms and get real-time alerts for your sites on any connected device without the need to buy, install or maintain your own lightning detection equipment.

Ease of use and accessibility

Get information and alerts with the intuitive web-based interface and reporting dashboard, making it quick and easy to access key operational insights.

Personnel safety and operational efficiency are critical priorities in onshore and offshore wind energy farms. With Vaisala Thunderstorm Manager, part of our Xweather suite of weather and environmental data services, operators can protect technicians, improve operational resilience, and manage risks from lightning, tropical cyclones and severe storms.

Particularly during wind farm construction and operation, crews and equipment are exposed to significant storm risks. Thunderstorm Manager delivers an all-in-one solution for real-time storm monitoring and automated alerts for any location in the world, so you know exactly when to pause operations and when it is safe to resume.

Thunderstorm Manager draws data from Vaisala's Global Lightning Dataset (GLD360) and National Lightning Detection Network (NLDN) — the most trusted lightning detection networks in the world — for uncompromising performance. Cloud-based convenience and an intuitive, web-based interface let you monitor threats and alerts from any connected computer or mobile device.

Thunderstorm Manager at a glance

Applications

- Improve site safety with real-time storm tracking and protect construction and operations personnel with automated alerts; use the secure API to integrate alerts into your operational protocols
- Monitor storms and tropical cyclones to protect offshore assets and keep operations running; review the 30-day alert history to prioritize inspections and repairs
- Automatically warn construction crews and technicians with beacons and sirens to stop work and seek shelter, and send all-clear notifications when it is safe to resume work

Key features

Versatile display options let you see what matters most. Map layers include lightning (cloud-to-ground and in-cloud with a color-coded time stamp), satellite infrared, radar, temperature, wind, tropical cyclones, meteorological service alerts and more.

Lightning Threat Zone shows you if storms are moving toward or away from your wind farm. It visualizes storm cell trajectories and risk areas in 10-minute intervals up to 60 minutes in advance.

Create per-site alerts to meet or exceed industry standards for safety and compliance. Thunderstorm Manager supports three levels of alerts (information, warning and alarm), custom trigger distances, custom alert areas, and a choice of triggering criteria.

Connect Thunderstorm Manager to on-site systems to warn technicians with flashing lights, sirens, and on-screen displays. Use the secure alerting API to integrate alerts into your systems and processes to get the right alert to the right people at the right time.

Why Vaisala for renewable energy?

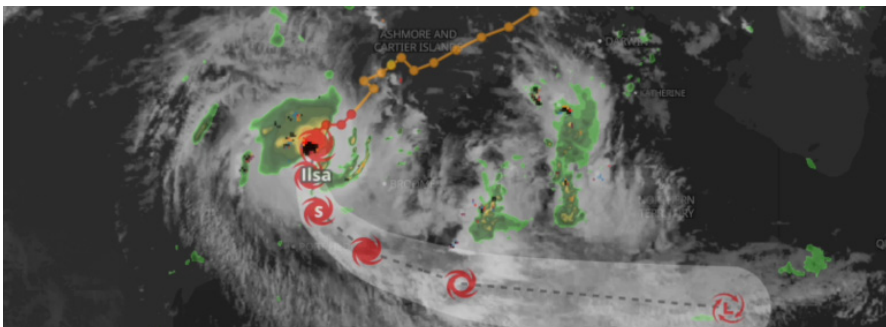
We are innovators, scientists, and discoverers who are helping fundamentally change how the world is powered. Vaisala elevates wind and solar customers around the globe so they can meet the greatest energy challenges of our time.

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.



VAISALA

vaisala.com/wind-energy



Scan the code for more information

Ref. B212595EN-B ©Vaisala 2023

This material is subject to copyright protection, with all copyrights retained by Vaisala and its individual partners. All rights reserved. Any logos and/or product names are trademarks of Vaisala or its individual partners. The reproduction, transfer, distribution or storage of information contained in this brochure in any form without the prior written consent of Vaisala is strictly prohibited. All specifications — technical included — are subject to change without notice.