



Lightning Site Assessment

KNOW THE LIGHTNING ENVIRONMENT AT YOUR SITE



Use the insights from our Lightning Site Assessment to prevent lightning damages at your turbine sites.

Why get a Lightning Site Assessment?

The knowledge of the lightning environment for wind turbine projects can support planners, operators, and insurance companies in different life cycles of the wind turbine project.

1. Choose the right lightning solutions during the turbine and park design phase

An LSA helps **planners** to select the suitable lightning sensors or LPS designs for the specific lightning environment. By choosing the right solutions at this stage, you can avoid damages and lower your maintenance and repair costs in the long term.

Using the LSA, planners can also better schedule the installation of the turbine parks. This improved planning, especially for remote and off-shore parks, can lower your costs and ensure timely project delivery.

2. Plan your maintenance & retrofit campaign better during the operation phase

Scheduling maintenance or a retrofit campaign. Booking logistics and personnel. Plan the shutdown. And then everything goes to waste because there is a thunderstorm.

Owners and operators can improve their planning if they request an LSA. The LSA will show the seasonal expected lightning activity and also highlight which turbines are the most exposed to lightning. You can therefore schedule maintenance based on data and can easier choose which turbines need e.g., retrofit sensors.

SUMMARY OF ADVANTAGES

- Know your lightning risks and potential operational cost in advance
- Prioritize inspection and maintenance
- Specify service agreements based on facts
- Get a lightning expert's opinion on the likely exposure risk
- Compliant to IEC 61400-24:2019

3. Get your wind park's lightning risk profile defined accurately

An LSA can assist you, as an **owner**, in getting your wind park's lightning risk profile defined during the underwriting process when establishing policy agreements. Request an LSA to ensure you have the right insurance coverage, set your premiums as accurately as possible, and safeguard your business.

Lightning strikes vary from site to site and even across a single wind farm due to local topography and weather conditions. There can be huge differences in expected lightning exposure, severity, and occurrence.

While the publicly available or purchased lightning data could help you get some insights into the lightning environment at your site, there can be significant differences between datasets. It is therefore essential that you know the data limitations in each case and interpret the data accordingly to give an accurate picture.

Our detailed Lightning Site Assessment brings you a complete overview of lightning risks for your site.

What do you get in a Lightning Site Assessment?

The LSA provides a detailed assessment of the lightning environment at your site. The outcome of the LSA is a 20+ pages long technical report that is reviewed and approved by one of our lightning experts.

In the report, you will find:

- the estimated number of **flash density** during a given time interval
- an expected **distribution of lightning** across the wind farm (including which turbines are the most and least exposed to lightning at the site)
- the **polarity of flashes** (including an estimation of the increased lightning activity due to upward lightning based on the calculation method in the IEC standard)
- an estimation of how often the turbine is **immersed in the clouds**
- any special **weather characteristics** at the site (if we find a correlation between lightning exposure, season, and turbine layout)
- the likelihood of **undetected lightning** at the site

Based on our findings, and upon agreement, we can also suggest you lightning protection solutions that would achieve the best protection for your turbines at your specific site.



Online Lightning Site Assessment

Do you want to have an easy-to-understand summary of the lightning environment at your site?

Then try our Online Lightning Site Assessment tool!

The tool gives you the most basic information on the flash density, on how often the turbines are immersed in the clouds, and the undetected lightning at the site.

You will get a 2-pages long, automatically generated report. While the accuracy is lower compared to the full lightning site assessment, the tool still gives you a good overview to help you compare different locations and identify your lightning risks.