

Historian for solar or wind energy

High-quality historical data for informed decisions for renewable energy projects



Key benefits

Trusted, tested data

Based on almost two decades of satellite imagery, multiple decades of global weather data, and cutting edge weather simulation technology. The data is solidly supported by science plus hundreds of customers worldwide, from project developers and operators to the financial community and renewable energy consultants.

Accurate predictor of project success

High-quality historical data yields an accurate baseline useful for predicting project success.

Quickly identify and fix problems

Data is based on initial projections and ongoing comparisons on decades worth of data — not just weeks or months. This enables earlier detection and analysis of underperformance and other problems for faster resolution.

Easy to integrate

The data is delivered in data files that are easy to access and integrate through FTP or API.

Includes Solar Time Series Tools 2.0

Brings solar customers even richer, high-quality data for confident decision-making, including an expanded set of solar variables and ground surface albedo.

Weather is the fuel of your renewable energy project

Capturing the most value from investments in wind and solar energy projects depends not only on reliable information about the site's current and future conditions, it also depends on a thorough understanding of the location's past weather patterns and trends.

Vaisala Historian for wind and solar energy, part of our Xweather family of subscription based products, gives asset owners, developers, and project managers access to long-term historical wind and solar data to drive decisions, create valuable comparisons reports, and analyze output year over year.

Historian is a suite of tools that draw upon Vaisala's commitment to superior data quality to drive decisions and streamline operations. Designed to meet a wide range of needs and use cases, the solution includes Time Series Tools and GIS data for wind and solar, solar Climate Variable Analysis (CVA), and solar Performance Reconciliation. Each of these tools delivers valuable historical data to help you maximize output, minimize risk, and make better business decisions.

Time Series Tools

A subscription-based service providing access to high-quality wind and solar datasets

Applications

- Minimize investment risk and improve energy output estimates for exact locations
- Increase understanding of trends and maximize profit margins
- Decrease dramatic shifts in project value and year-over-year variations

Key features

Subscription service allows you to compare up to five different models for any site through a dashboard that enables side-by-side analysis of long-term trends.

Multiple datasets enables resource risk evaluation and energy modeling.

Data is updated monthly and provides a straightforward means to quickly assess the quality of datasets available for any given site.

Time Series and Typical Meteorological Year (TMY) can be downloaded and delivered instantly for one of the most comprehensive and cost-effective resources of bankable data available.

The image displays two screenshots of the Vaisala Energy dashboard. The top screenshot shows the 'Solar Time Series Viewer' for a location in France. It includes a map, a list of subscription options (Vaisala 1.0 to 2.1), and two time series plots: a monthly GHI (m²) plot from 2000 to 2018 and a TMY plot. The bottom screenshot shows the 'Wind Time Series Viewer' for a location in the United States. It includes a map, a list of subscription options (MERRA2 and ERA5), and two time series plots: a monthly wind speed (m/s) plot from 1980 to 2020 and a TMY plot. Below the wind plots is a 'Wind Time Series Download' form with fields for location name, hub height (130 meters), and a 'SUBMIT' button.

Site prospection maps

Wind and solar GIS data

Vaisala is the first to quantify the world's wind and solar resources. We use global reanalysis data and high-resolution numerical weather simulation models to provide comprehensive wind datasets that go well beyond simple wind maps, while decades of satellite images provide accurate estimates of solar irradiance anywhere in the world. Our time series products provide hourly (or finer) data at a single point. Also available are statistical averages of this data over regions ranging from individual projects to entire countries as GIS data layers.

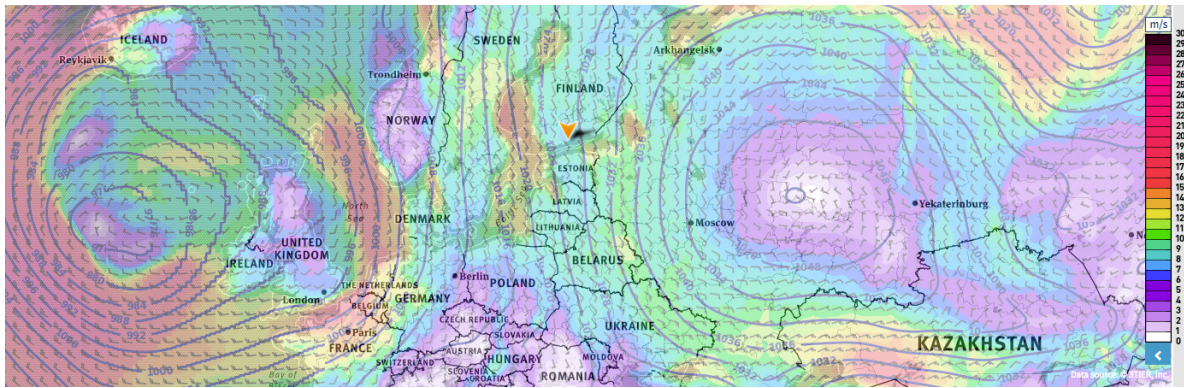
Applications

- Reliable historical GIS data to guide operation, management, and maintenance of solar and wind energy assets
- Selection of optimal asset placement for maximal output

Key features

Available as 3km monthly or annual irradiance spatial data (GHI, DNI, or DIF) and 5km (or finer down to 90m resolution) monthly or annual average wind speed data (10, 20, 50, 80, 140-meter hub height).

Additional available datasets include wind rose, power density, power capacity, Weibull distributions and temperatures.



Solar Climate Variable Analysis (CVA)

Detailed analysis of solar resources at a project location

Applications

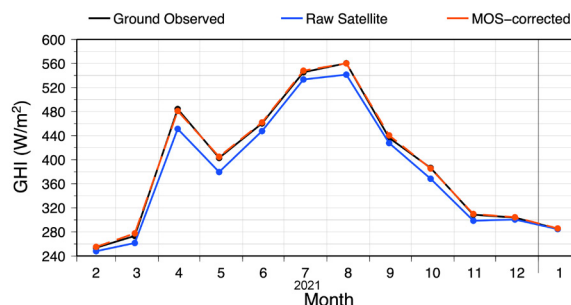
- Long-term historical data to forecast project success
- Combine with optional onsite measurements to understand the history of your site's solar resource variability, and ultimately reduce the uncertainties of estimating future project generation

Key features

Combines long-term irradiance data and customer observations for a comprehensive and detailed analysis.

Site calibration of irradiance values using Vaisala's MOS-correction methodology.

Long-term solar variability, uncertainty calculation, and probability of exceedance values analyzed by the report.



Solar Performance Reconciliation

Updated solar irradiance and weather time series data at a single location or across your entire portfolio

Applications

- Ensure existing projects are operating at optimal levels and enables diversification of portfolio assets
- Streamline pipeline management for proposed sites

Key features

Based on actual quarter- or half-hour high-resolution satellite imagery observations processed to hourly GHI, DNI, and DIF values.

Algorithms contain parameters and coefficients based on empirical fits to observational data.

Time series data is based on regularly updated global solar datasets and easily integrates into internal processes.



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/renewable-energy



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