Vaisala Historian for renewable energy

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

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 renewable energy offers asset owners, developers, and project managers access to long-term historical wind and solar data in a variety of forms to drive decisions, create valuable comparisons reports, and analyze output year over year.

Vaisala Historian for renewable energy consists of a suite of tools that draw upon Vaisala's commitment to superior data quality to drive decisions and streamline operations for renewable energy projects. Designed to meet a wide range of needs and use cases, Historian solutions include 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 renewable energy project developers, asset owners, operators, and managers to maximize output, minimize risk, and make better business decisions.

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, Vaisala's data is not only supported by science but by hundreds of customers around the world ranging from project developers and operators, the financial community — and renewable energy consultants.

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

Quickly identify and fix problems
Basing initial projections and ongoing comparisons on decades worth of data, instead of just weeks or months, 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, via FTP or API.

Time Series Tools for wind and solar

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 users 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 offer users the ability to perform resource risk evaluation and energy modeling.

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

Time Series and Typical Meteorological Year (TMY) can be downloaded from the tool and delivered instantly for one of the most comprehensive and cost-effective resources of bankable data currently on the market.
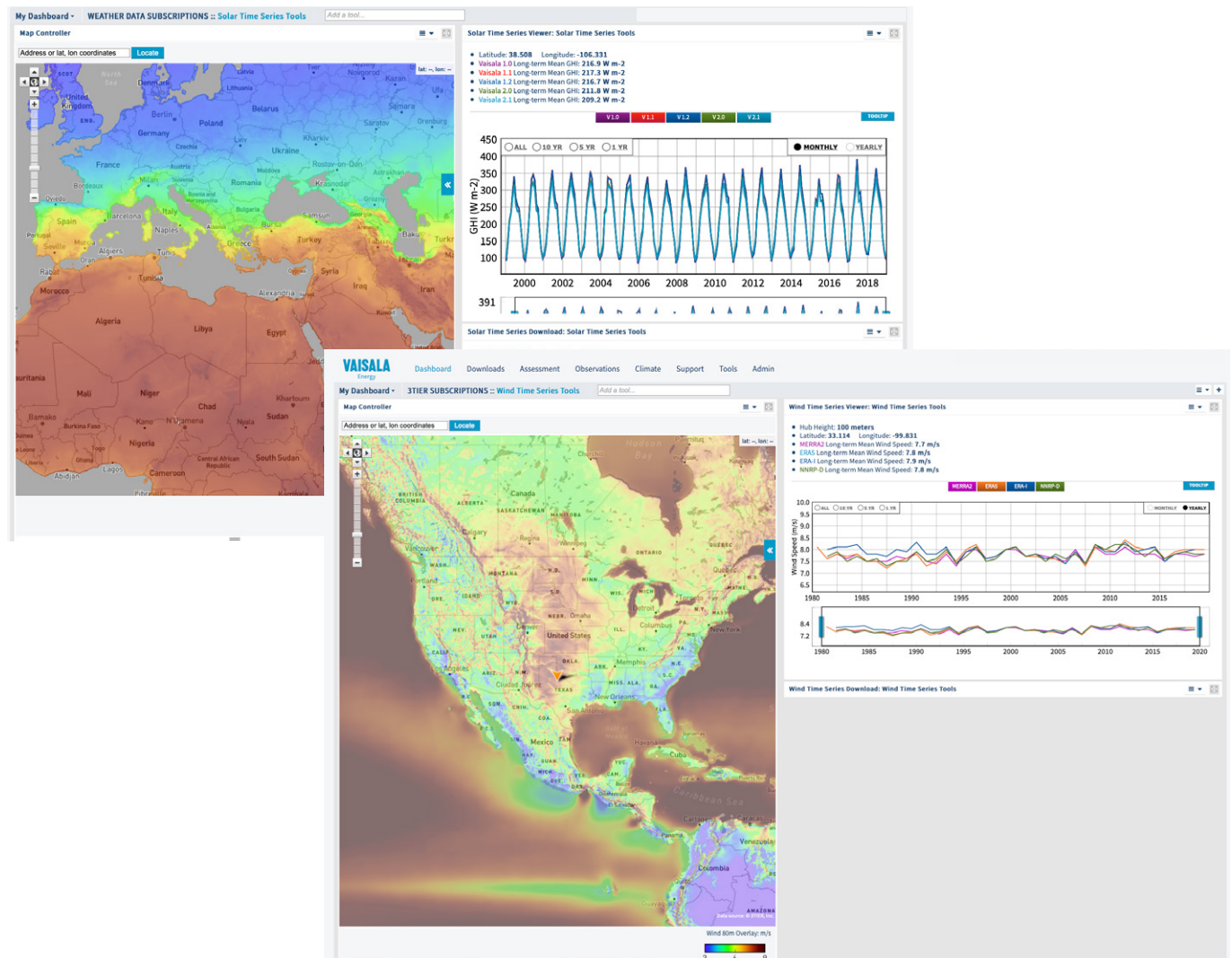
Site prospection maps

Map visualization of wind and solar GIS data

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 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.
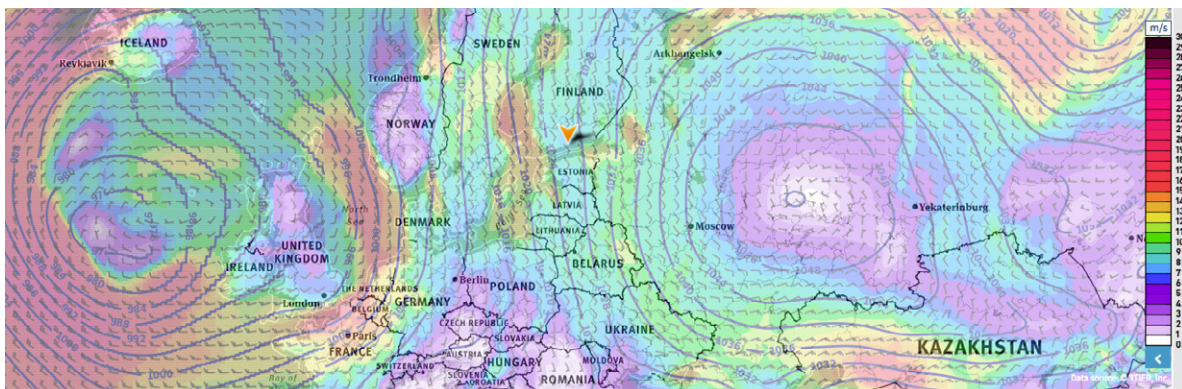
Solar Climate Variable Analysis (CVA)

## Detailed analysis of solar resources at a project location

Applications

- Long-term historical data to forecast project success.
- Use long-term historical data, optionally combined with onsite measurements, to understand the history of solar resource variability at the user's site and ultimately reduce the uncertainty associated with 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.
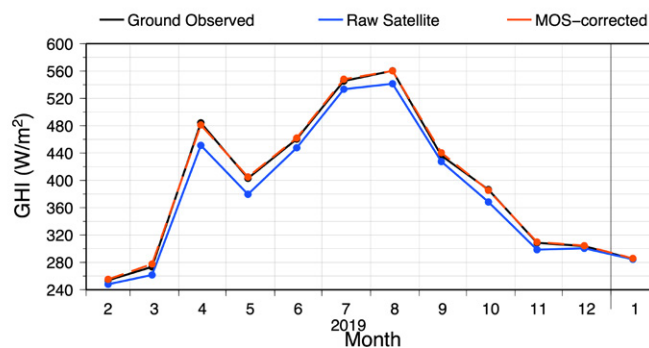
Solar Performance Reconciliation

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

Applications

- Ensures existing projects are operating at optimal levels and enables diversification of portfolio assets.
- Streamlines 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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