

2025

SolarEye Platform

**RENEWABLE ENERGY MONITORING &
ANALYTICS**

SolarEye Platform

1. Beyond Monitoring

Efficient management is much more than just control. It is a vital component of any renewable energy project, whether the installation is a small domestic venture, or part of a large-scale renewable energy development. Complete system monitoring and analysis is important for maintaining earnings performance at maximum levels, and promptly detecting status changes.

Traditionally, systems for monitoring and analyzing PV or other renewable energy installations have been limited to power production monitoring and basic error reporting. The ability to employ energy analytics and perform energy optimization has been omitted. In this context, the SolarEye Platform (<http://SolarEye.eu>) launches a new era in the PV Industry, by incorporating innovative data mining models (based on **Artificial Neural Networks**) and being the first and only Web 2.0 platform with built-in Artificial Intelligence (based on **Expert Knowledge Systems**) for:

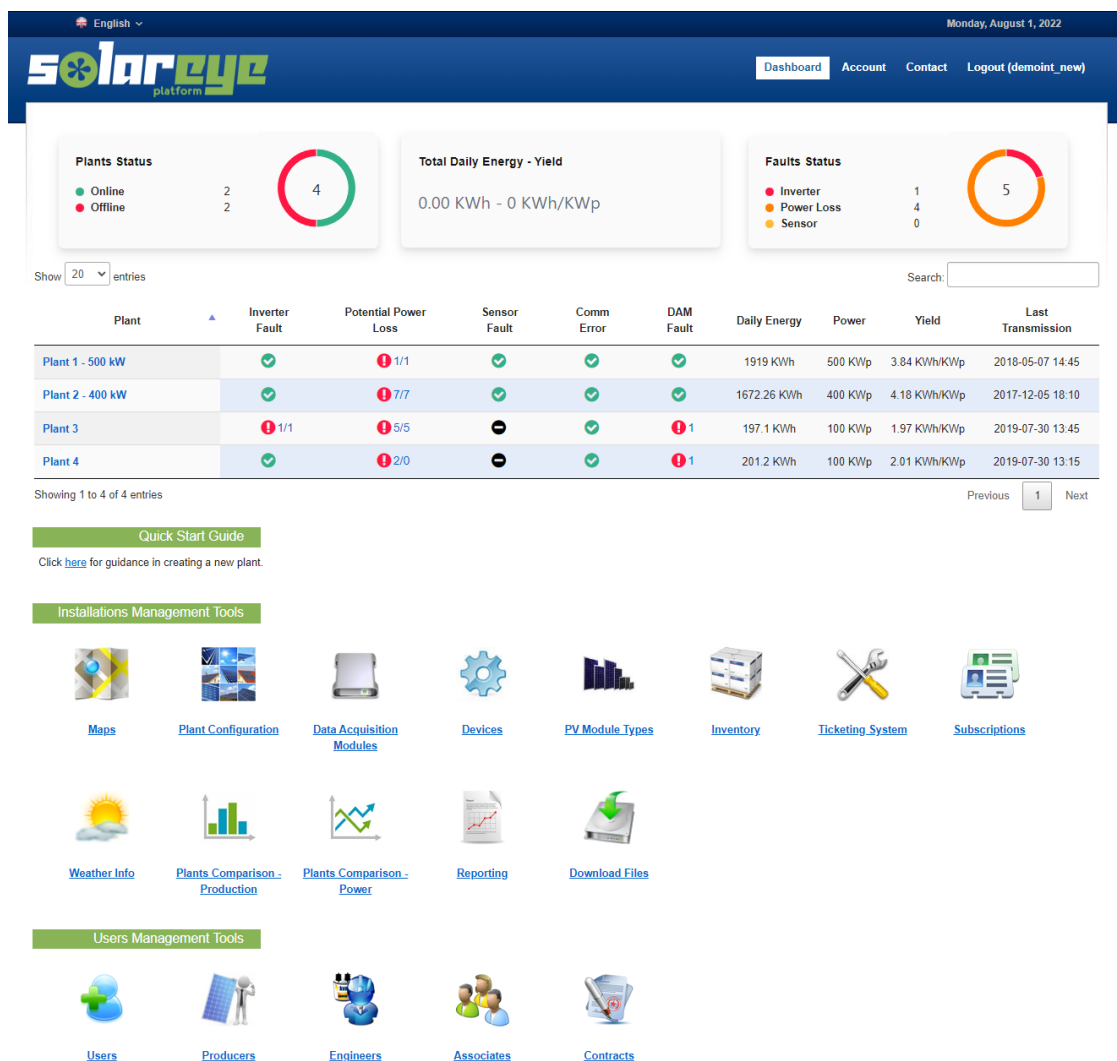
- Fastest fault isolation.
- PV plant yield maximization.
- Increase of return on investment.

The SolarEye Platform is an intelligent cloud-based system that acts as a **“virtual energy assistant”**, proactively monitoring and automatically detecting potential faults in PV plants with high accuracy - creating a synergy between the plant owner and the PV professionals.



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2. SolarEye Innovations



Intelligent Analytics

SolarEye is the only system with built-in intelligence, based on state-of-the-art technologies, capable of estimating, fast and accurately, each plant's expected production under certain climate conditions.

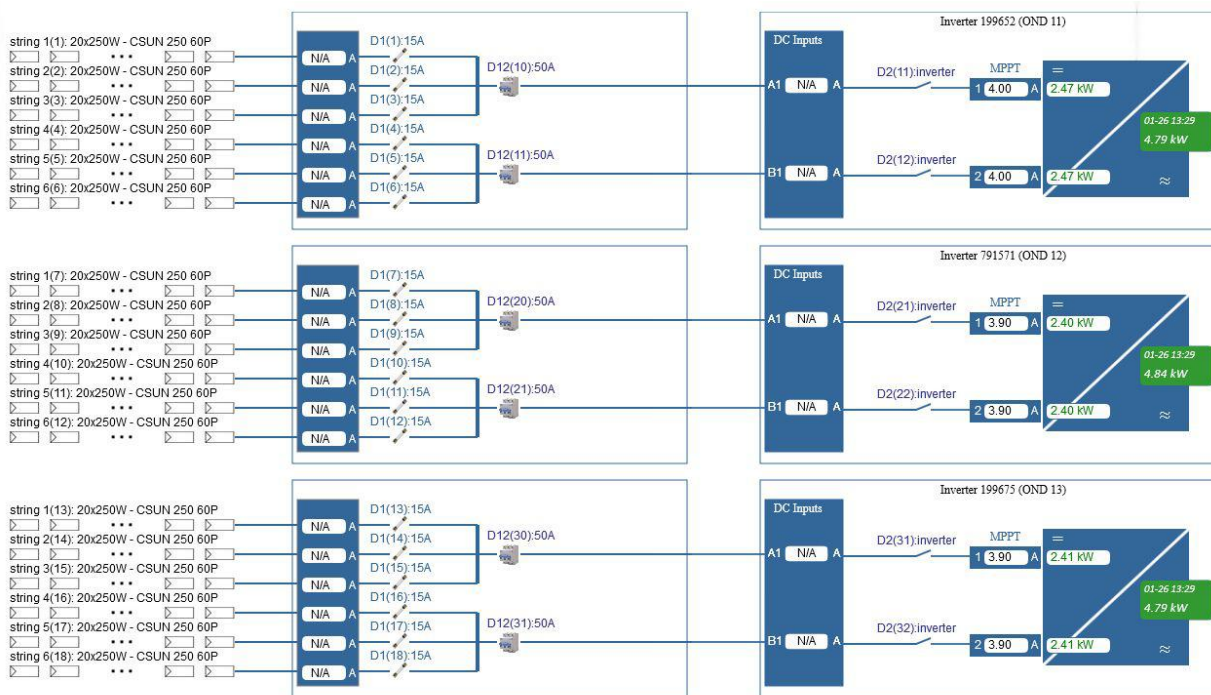
Early Detection

Automatically determining deviations from the expected production with high accuracy, SolarEye detects potential DC disturbances and faults (down to the string level), facilitating maximization of the plant's yield and increase of ROI.

Minimizing Response Times

Faults at the AC side including fuses and other overcurrent protection devices can be spotted instantly in a graphical diagram depicting the plant's structure. Hence, SolarEye saves time on fault analysis at the office and fault recovery in the field, resulting in cost savings from better scheduling of repairs and reduction of unnecessary visits.

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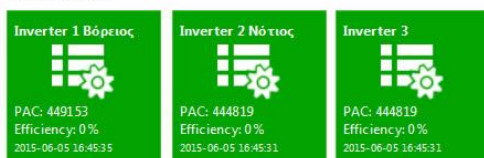
Quantification of Power Loss

Power loss from either AC Faults or DC disturbances is quantified with high accuracy, providing valuable information that could be used for statistical analysis and insurance claims.

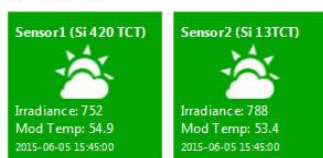
Decision Support

Information that otherwise you could not even imagine is revealed. Potential fault conditions are discovered. Knowledge is created regarding what each part of the installation is capable of producing, at a fine-grained level, under each plant's specific microclimate. Having this wealth of knowledge allows PV professionals to make informed decisions about necessary corrective actions with respect to unexpected production decrease or failures.

Inverters:



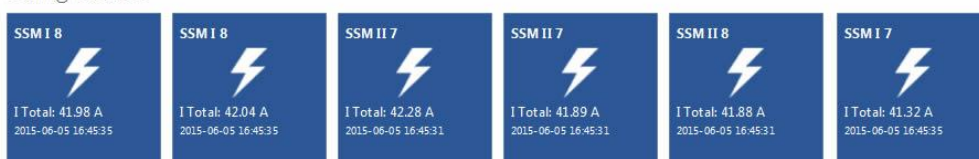
Sensors:



Meters:

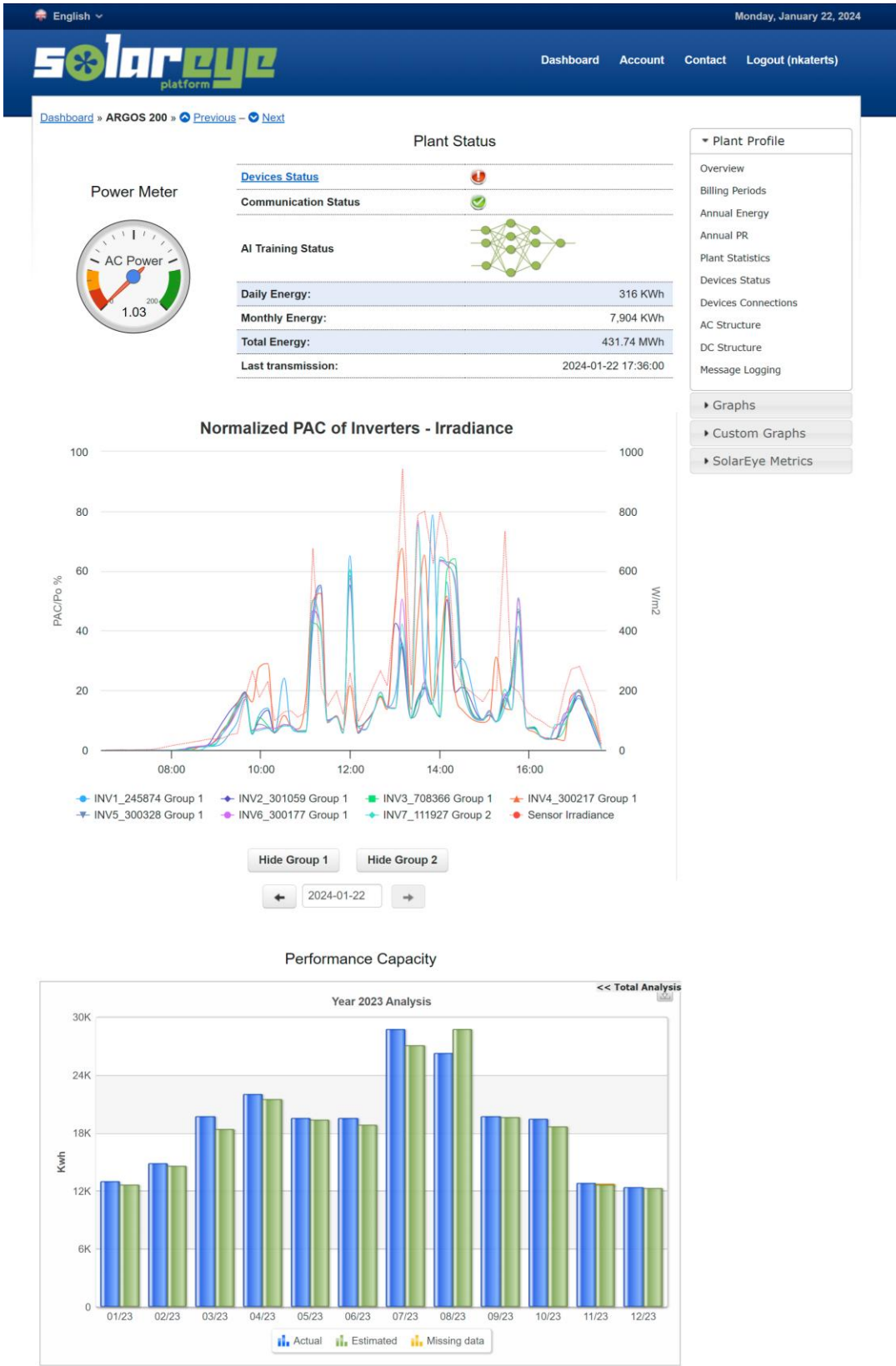


String Boxes:



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3. SolarEye Advanced Features



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Performance Estimation

Real-time analysis and comparison between the energy produced by the plant and the estimation of the energy that should have been produced based on intelligent dynamically-created models. Deviations in performance are calculated with high accuracy and facilitate the detection of potential disturbances in the installation.

Monitoring and Management

- Monitor multiple plants simultaneously, through a unified management environment of PV installations, adopting the concept of a **Photovoltaic Operating Center (POC)**.
- Presentation and management of plants with inverters of multiple types and different manufacturers.
- Comprehensive logbook of the plant's operational status through message logging of all faults that have occurred, and their statistical analysis.
- Ticketing system for management of existing failures and scheduled maintenance tasks.
- Multiple performance metrics per PV installation.
- Comparison of plants based on different performance metrics.

Rich Diagnostic Tools

- Innovative diagnostic tools for rapid fault isolation through user-friendly and stylish interfaces, based on Web 2.0 technologies.
- Automatic generation of the DC diagram along with measurements for several components of the installation.
- Automatic generation of the AC diagram of each installation and visualization of possible faults, thus increasing recovery speed.
- Identification of inverters with loss of energy, plotting the period when production is less than expected and the corresponding loss of energy.
- Graphical representation of multiple data (Generated Power, Energy, Current, Voltage, etc.).

Dynamic Alert & Reporting

Alerts are sent through email and SMS in case of major failures and erratic operation. Useful information regarding the plants' operational status and performance is sent.

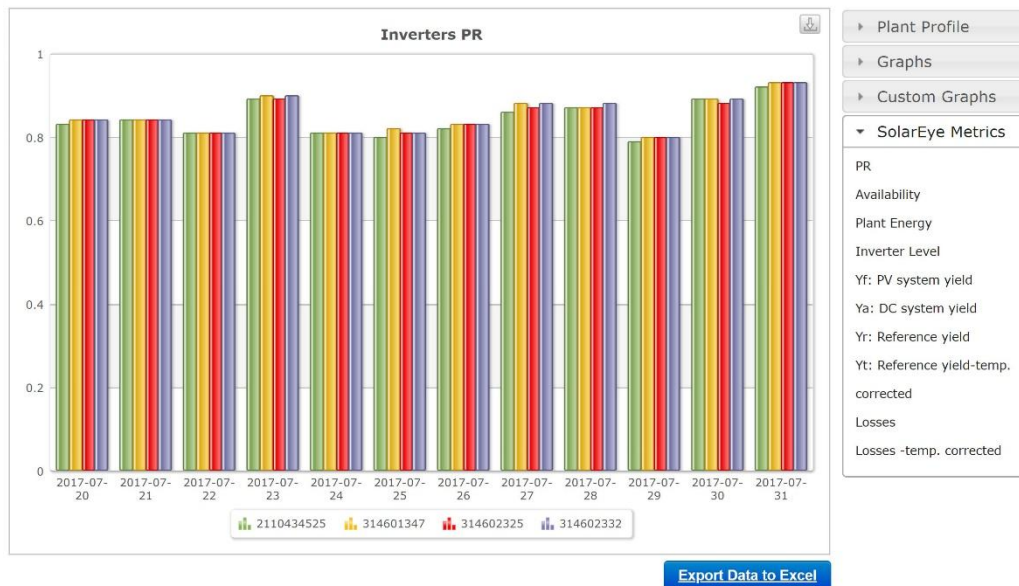
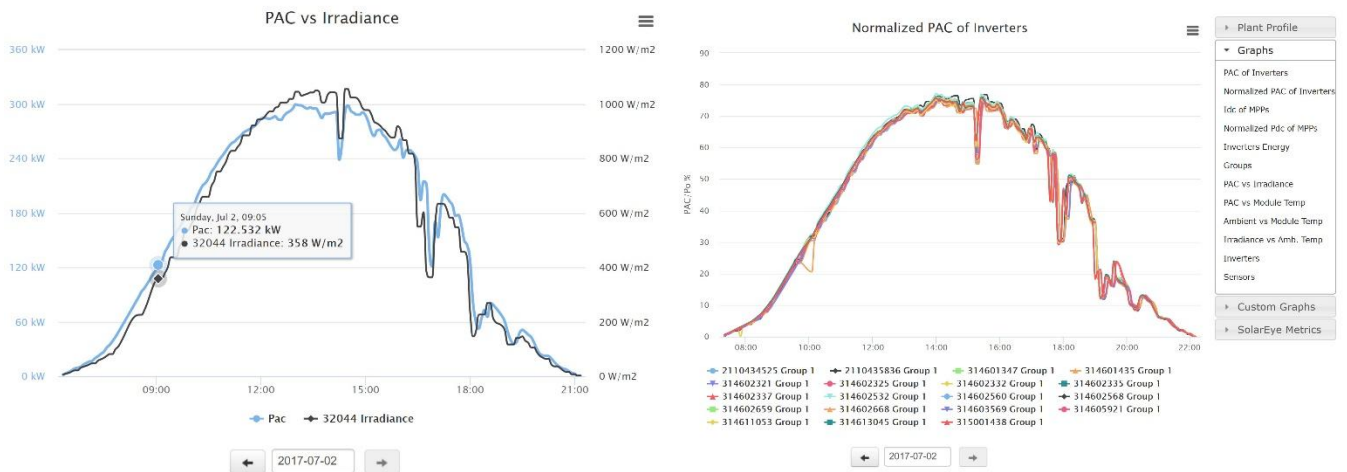
Unified Solution

The SolarEye Platform is compatible with third party data loggers, ensuring interoperability with most inverter manufacturers. More than 100 inverter brands are supported.

Powerful Data Presentation

Configuration and management through a rich set of data analysis and presentation tools. Standard and custom defined diagrams providing all the required information.

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Select Device-(s)

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2110435836
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314602321
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314602532

Select Metric

PR

Start Date*

2017-07-20

End Date*

2017-07-31

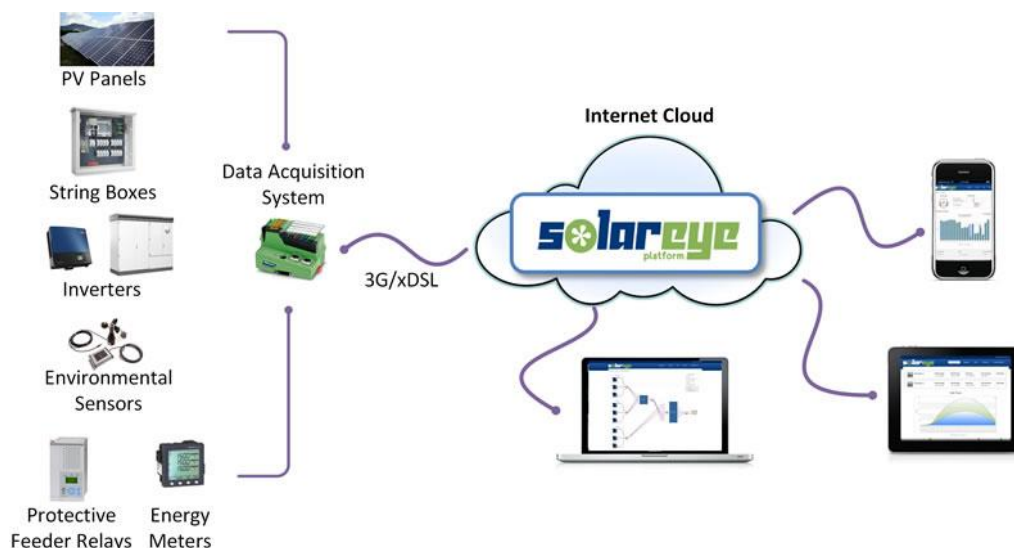
[Generate Graph](#)

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		Other Systems
Basic Characteristics	Monitoring and management of multiple parks through a single interface .	●
	Presentation and management of plants with inverters of multiple types / different manufacturers	○
	Compatibility with pre-installed telemetry systems and environmental sensors. Easy migration for existing systems without any further cost.	–
	Easy and fast installation.	○
	Possibility of using one telemetry system for multiple parks.	–
	Easy access via multiple devices (computers, tablets and smartphones).	●
	Visualization and analysis of plant data in real time.	Up to 3-hour delay
Advanced Characteristics	Automatic assessment of the performance of an installation through advanced Artificial Intelligence (AI) models .	–
	Comparison of the deviation in the generated energy from the estimated one under real conditions .	–
	Automatic calculation of the energy loss in case of breakdowns or malfunctions (e.g. because of dust or shading).	–
	Identification of multiple types of errors and centralized management.	○
	Sending of alerts through e-mail / SMS	●
	Monitoring of string boxes, feeder relays, and energy meters.	●
	Automatic generation of the AC and DC diagrams of each installation and visualization of possible faults	–
	Graphical representation of multiple data (Generated Power, Energy, Current, Voltage, etc.).	●
	Multiple performance indicators for each installation (Performance Ratio, PV System Yield, DC System Yield, Reference Yield, Losses, Temperature corrected losses, Availability).	●
	Comparison of plants based on different performance indicators.	○
	Complete ticketing system for management of existing failures and scheduled maintenance tasks.	○
	Grid Operator integration	○

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5. Product Insights



The SolarEye Platform is a cloud-based platform that is provided as **που παρέχεται με τη μορφή Software as a Service (SaaS)**. It is compatible with third party data loggers, sensors, string boxes, feeder relays, energy meters (installed in the field), as well as more than 100 brands of inverters. Thus, the SolarEye Platform can be applied to any present and future PV installations.

Examples of Compatible Data Loggers

Examples of Compatible Data Loggers							
Vendor Independent							
	WebdynSun	Meteocontrol blue'Log / Web'log	Solar-Log	Carlo Gavazzi	Solar Monitor 2 / 3		
Provided by inverter vendors							
	SMA WebBox - Data Manager	FIMER/ABB PVI-AEC-EVO	KACO Powador proLOG	Fronius	DIEHL Platinum Webmaster	HUAWEI SmartLogger	Sungrow Logger 1000

The SolarEye platform is accessible over the Internet from computers with Windows, MacOS or Linux, as well as from mobile phones and tablets with the Apple iOS or Google Android operating system. All modern browsers (Edge, Firefox, Chrome, Opera, etc.) are appropriate to view the interfaces and functions of the SolarEye platform.