



# 4Improving Monitoring

Powerful, flexible, open, scalable  
and adaptable to your needs

A new way to monitoring and analyze the performance of you investment



## Full control when you need it!

4Improving SOLAR offers a Real-time information on the performance of your solar installations is critical to achieving your goals for energy savings, cost reduction, and sustainability.

4Improving,Äôs proprietary monitoring system serves as a round the clock sentinel, often detecting issues long before they would be noticed through routine inspection.

# Leader in Energy Monitoring

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## Performance Monitoring, Reporting and Control

4Improving Monitoring is the best monitoring and control solution for photovoltaic (PV) power management. Through browser and mobile interface, 4Improving Monitoring presents up-to-the-minute information and enables site-wide control.

## Dashboard and Portfolio Views

4Improving Monitoring provides summary portfolio view with information about all your resources as well as individual resource Dashboards showing key performance data for a specific site. From there, users can drill down for information on revenue meters, MET stations, PV inverters, combiners and trackers. From there, users can access additional details, acknowledge alarms, and produce reports, displays real-time performance information in a Web Browser or mobile App.

- > Display real-time details about inverters/equipment, resource (site) and portfolio;
- > Compare performance for multiple resources (sites);
- > Organize portfolio logically (e.g. Geography, size);
- > Interactive site diagram shows status and alarms.

## Control Commands

- > Inverter commands to connect/disconnect; set max power; and set VARs;
- > Set ramp rate and duration;
- > Schedule commands;
- > Automatically regulate power output at point of delivery.

## Operations, reports and alarms

4Improving helps O&M staff to reduce system downtime and focus on increasing system performance by providing users with the capability to track the energy generated by a power plant; receive alarms in the case of inverter failure or data communication interruption; manage trouble tickets that can be assigned to support staff to ensure ownership and set priority levels; and access energy trending analytics and reports to streamline operations and maintenance activities.

- > Alerts and email notifications reduce system downtime and increase operations efficiency.
- > Minimize false alerts and decrease the response time for critical alerts by quickly identifying problem assets with no margin for human error in interpreting data from multiple sources.
- > Reduce technician hours and administrative time allocated to managing data.
- > Mitigate risks associated with performance guarantees.

# Advantages

4Improving Solar performs all these actions by means of the monitoring module, ensuring thus the smooth running of the facility and the success of your investment.

## Increase your return on investment

Proper functioning of all elements that set up an installation depends on the performance, efficiency and profits of the investment. Summing up, it is essential the optimum running of all of them and therefore fundamental to ensure a system that can accurately analyze and identify the errors and anomalies. The time to solve a problem is critical to ensure profit growth and profitability of your business. At this stage comes in our monitoring, control and optimization system.

## Reduce system downtime & quickly identify performance issues

4Improving saves users hours in performing data analysis and allows for quick identification of performance issues across an entire power plant portfolio with easy-to-use reporting tools, custom creation of key performance indicators, and automated alarms with user-defined classifications to alert responsible parties to system outages and underperformance metrics.

## Maximize profitability

With convenient web access and insight into real-time power plant data and added time-efficient tools that you can act on, you save on time and labor costs, which translate into a boost in your bottom line.

## Manage an entire renewable energy portfolio on a single platform.

4Improving Monitoring aggregates and normalizes realtime plant data from multiple sources, enabling users to easily manage assets and track energy performance of portfolios in all corners of the globe.

## A device-agnostic solution

4Improving Monitoring allows you to monitor any kind of TV power plant as well as thousands of connected devices (i.e., inverters, meters, string boxes, weather stations) at the power plant site, regardless of hardware manufacturer.

This eliminates the costly expense and cumbersome challenge of having to use several different monitoring systems that are limited to a particular power plant type or specific kind of hardware.

## 4Improving, 24/7 Operations Center

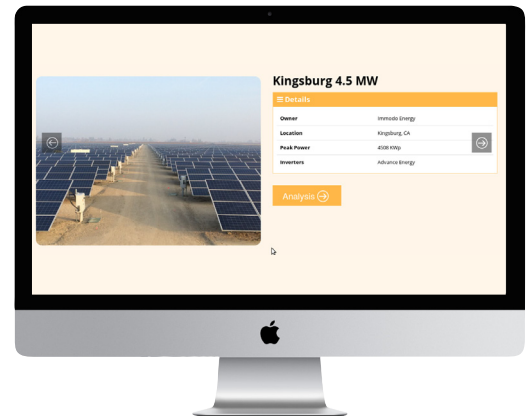
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# 4Improving Monitoring Features

Our system, knowledge engineering based, carries out an ongoing analysis of the elements working on a installation, establishing the behavioural patterns and acting accordingly. As a result we can detect problems before appearing and resolve them without affecting the installation performance.

## Centralized Dashboard

- > The main screen show a summary list of all your sites and their key performance indicators.
- > With a simple view you can figure out the status in your solarplants.



## Multouser and Multilanguage

- > Our monitoring system allows different users to access the system. Each one of them will have their own credentials, which will allocate different licenses to access certain functions and solar plants.
- > The system allows access in 6 different languages, thus covering all our clients, and needs.

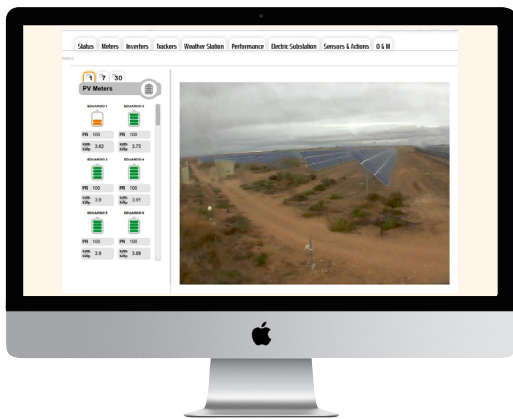
## Analysis tools up to series level

- > The solar monitor has tools to analyse installations at combiner box and series level.
- > Our monitoring system integrates the control of any device in real time to improve the application, and analysis capacity.



## Relational analysis of components

- > With a few clicks you can analyse the whole solar installation, component by component.
- > The comparison of installations is also possible, which even allows us to compare installations in different places and with different types of components.



## Capturing of Camera Images

- > We can also obtain images from the park, the cameras from the system in order to check the status of the park in real time.

## Report Generator

- > The system includes the generation of PDF and EXCEL reports for banks, auditors, engineers or maintenance clients use.
- > Receive a daily report email of all sites.



## Alerts & Tickets

- > We want to emphasize the most important aspect of our new system: Its autonomy, in that it generates automatic warnings for clients. Our platform allows us to configure for each user the types of warning which he/she would like to receive, at which intervals and how often he/she would like to receive them.
- > The system allows the operation of the installations with minimum effort as regards personnel, thus optimizing installations to their full potential.
- > View all system-generated alerts.
- > View, create and submit user-generated trouble tickets.
- > Assign tickets to support staff, ensuring ownership of a ticket.
- > Set and manage statuses and priorities of alerts/tickets to match business needs.
- > Receive real-time emails of power plant outages.
- > Receive a daily summary email of all active alerts/trouble tickets.
- > Comment on system- or user-generated alerts and tickets.
- > Advanced search to help you look for alerts/tickets matching a specific field value.
- > Print tickets to PDF.

