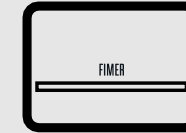# Aurora Vision

Aurora Vision: the power of a cloud

Scalable, secure and reliable cloud-based platform that allows customers to remotely manage and analyze the main KPIs (*Key Performance Indicators*) of their photovoltaic systems as well as use advanced diagnostics tools, in all market segments.

Free of charge

For the lifetime

Accessible through an *Aurora Vision*® account, provides highly interactive real-time access to FIMER photovoltaic systems data and it is structured to offer multiple product and services, with specific customer needs in mind.

+200k

Registered Inverter and Devices

+15k

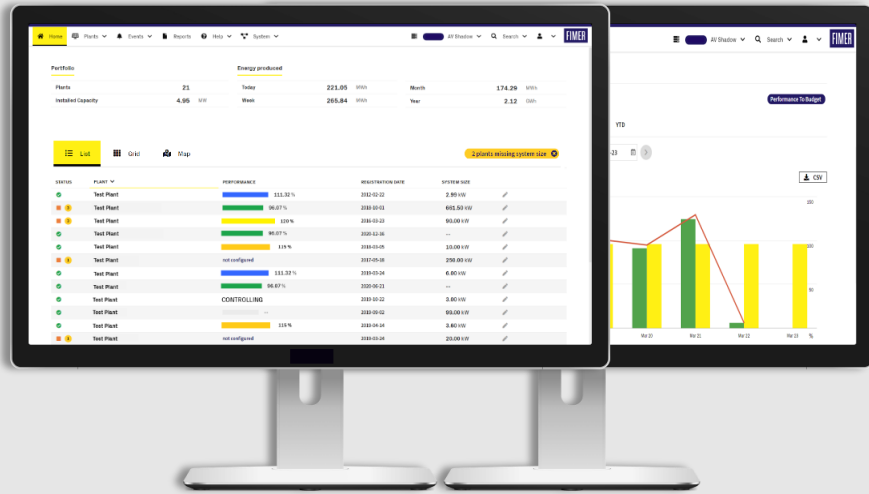**Managed Portfolios**

+40k
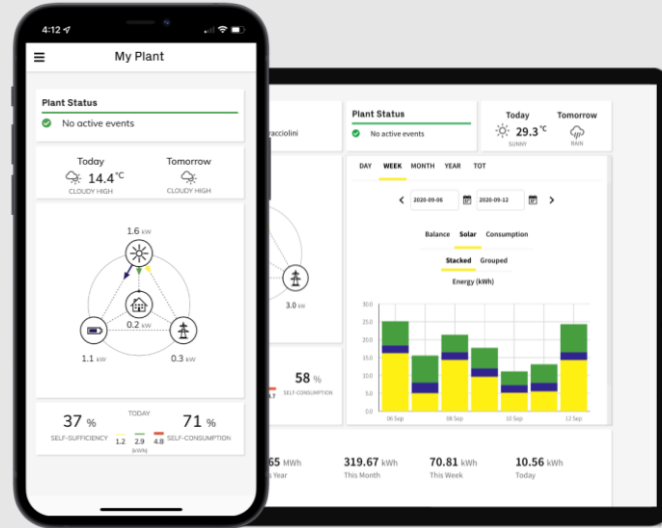
Monitored Solar Plants

+30k

Active Users

Aurora Vision: a 360° complete offer
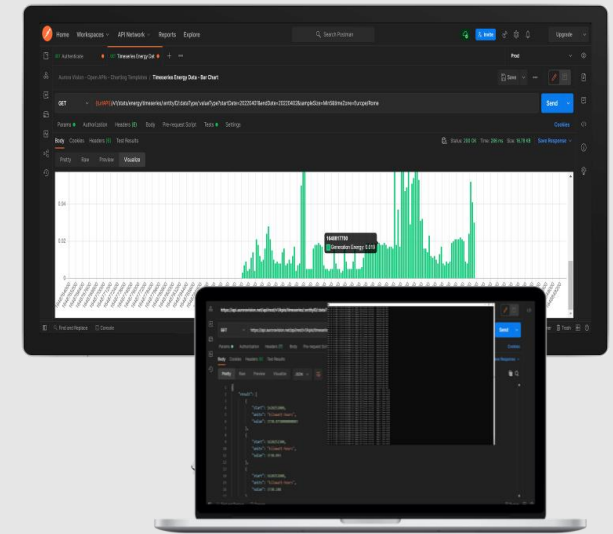

Plant Portfolio Manager

- Professional web-portal
- Monitoring of fleets of photovoltaic plants
- Plant lifecycle management
- Plant administration for end customers
- Advanced troubleshooting and reporting

Energy Viewer

- Easy to use mobile app*
- Self-performances monitoring
- Dynamic adaptation to physical configuration
- Seamless e-Mobility integration

*Coming soon as a web-portal

RESTful APIs

- RESTful architecture
- Design solutions and opportunities
- Machine learning
- Data analytics
- Seamless Cloud2Cloud integration

FIMER

Aurora Vision: a choice for everyone

Plant Portfolio Manager
Solar Professionals

Managers & EPCs

Installers & Operators

Public Internet Users
*KIOSK View Feature Enabled

Energy Viewer
Solar Plant Owners

Home Owners

Business Employees

Investors

RESTful APIs
Third Party Entities

Grid Operators

Utility Organizations

Software Developers

FIMER

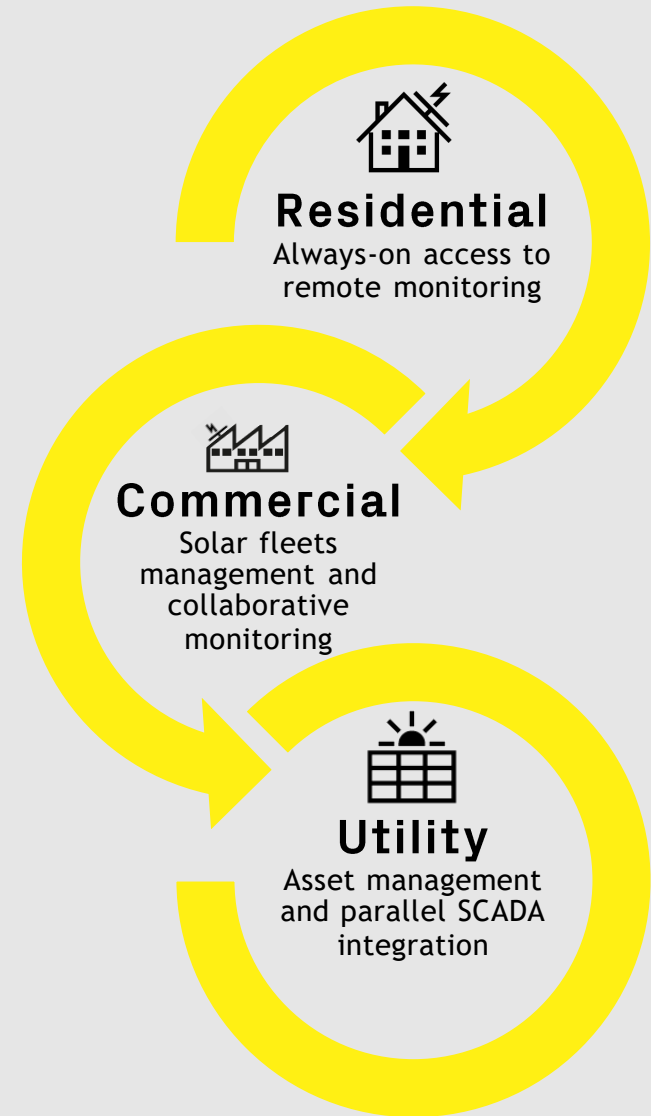# Aurora Vision: secure, reliable, scalable

FIMER solar devices integrate a completely automated method for sending data to the cloud platform, using encrypted data buffers protected by hardware credentials. A plug-and-play solution that relieves the user from the management of intermediate brokers.

Cyber-Security

HTTPS protocol for encrypted and protected connections

RBA (*Role Based Access*) system: a correctly validated user authenticates himself through his credentials. The service issues a JWT token, encrypted through a dedicated cipher suite, that allows stratified access to features and products.

Residential
Always-on access to remote monitoring

Commercial
Solar fleets management and collaborative monitoring

Utility
Asset management and parallel SCADA integration

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Aurora Vision: quick product comparison

	Plant Portfolio Manager	**Energy Viewer**	**RESTful APIs**
Administration Tools *Users, Plant Groups, Organization Manager*	✓ Currently available Organization Manager features only with v3.0.0	✗ Not available	✗ Not available
Plant Performance Telemetries *Plant level aggregation telemetries*	✓ Currently available	✓ Currently available	✓ Currently Available GET APIs only
Device Performance Telemetries *Devices focused telemetries*	✓ Currently available	✗ Not available	✓ Currently Available GET APIs only
Power & Energy Flows *Real-time power flows through synoptic card*	✓ Available with v3.0.0 through the integration of Energy Viewer Web	✓ Currently available	✓ Currently Available GET APIs only
EVI Monitoring *FLEXA AC Wallbox integration*	✓ Available with v3.0.0 Device performance telemetries only	✓ Currently available	✓ Currently Available GET APIs only
Self-Performances *Key Performance Indicators*	✓ Available with v3.0.0 through the integration of Energy Viewer Web	✓ Currently available	✓ Currently Available GET APIs only
Error Events Management *Configuration, logs, notification*	✓ Currently available	✓ Event Log & In-App Notifications	✓ Event Log GET APIs only
Reports Management *Reports creation, scheduling, notification*	✓ Currently available	✗ Not available	✗ Not available
Lifecycle Assets Management *Assets state, remote firmware update*	✓ Currently available	✓ Assets state management available in later updates	✓ Assets States GET APIs only

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Plant Portfolio Manager

The incredible becomes easy

FIMER
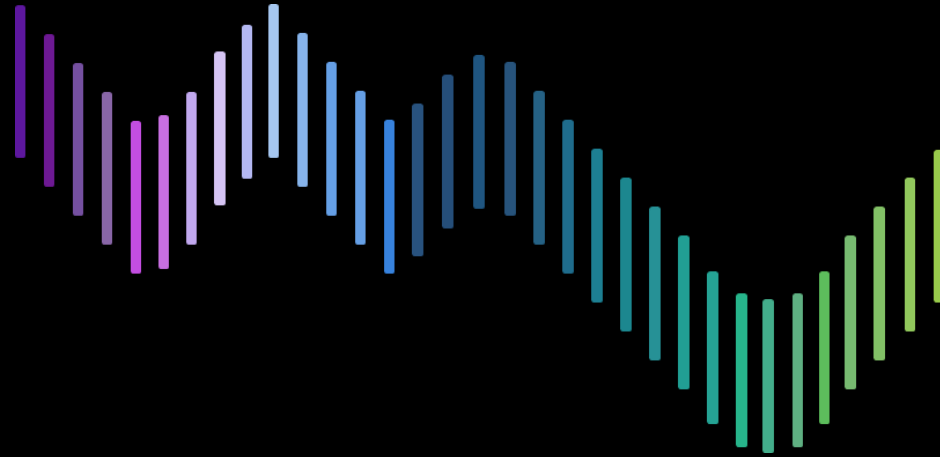
Plant Portfolio Manager
Overview

Advanced monitoring and management of your photovoltaic plants or those of your customers. It has all the tools needed to set-up, install, operate and administer a portfolio of residential to utility scale power-plants.
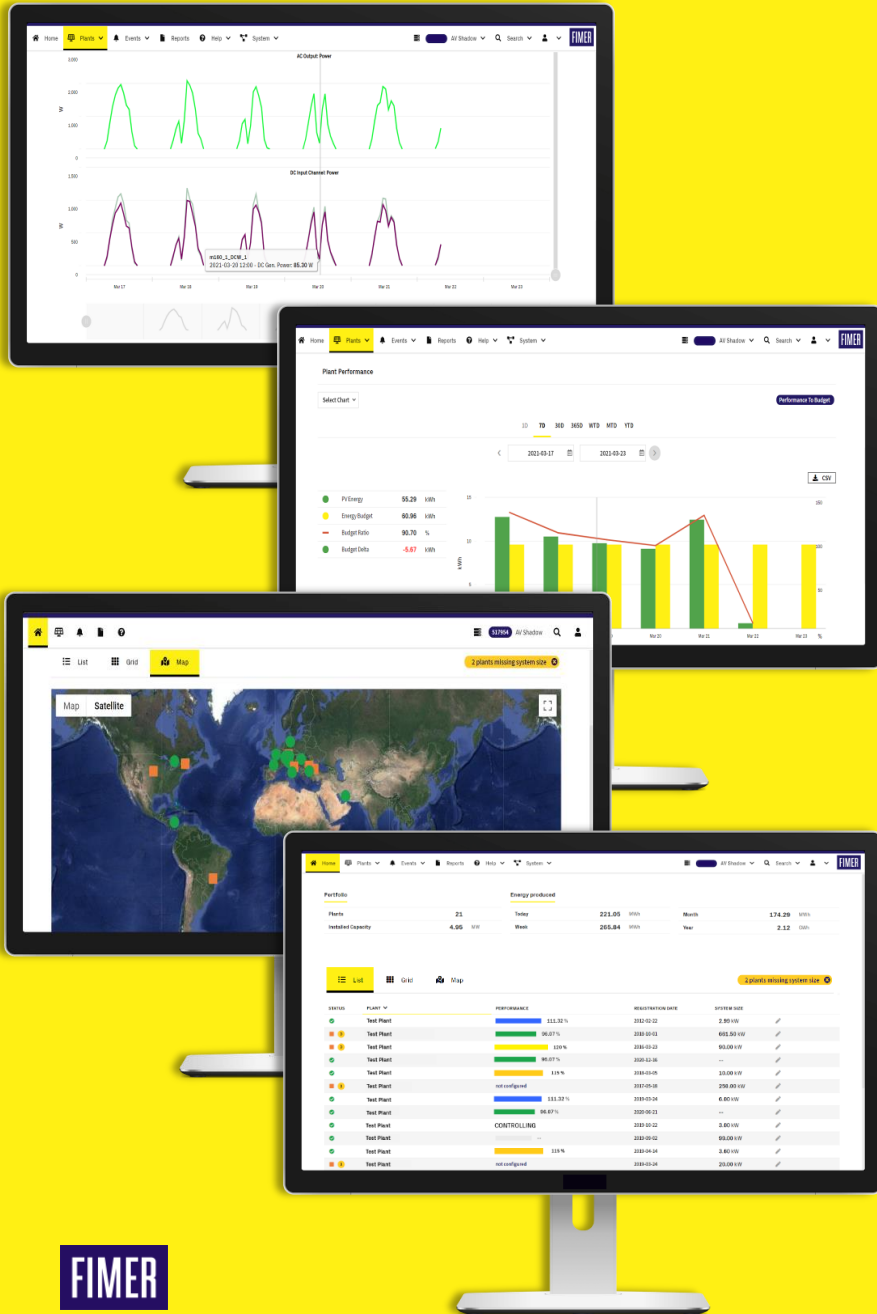
👥 Customers Management

Create new customer accounts, setup new power plants, provision collaborative monitoring

📊 Multilevel Monitoring

Evaluate the performances of a solar plant and detect under-performing conditions at device level

📖 Custom Reporting

Generate custom and scheduled reports for billing, finance and customers

⚙ Assets Management

Manage and reflect the installation lifecycle of inverter, loggers, combiners, meters, batteries… approve remote firmware updates

🔊 Robust Alarming

Define and manage error profiles and categories, consult event logs and customize notifications

Organization Management

Manage multiple portfolios in order to better structure your organization

FIMER

Home

All the information you need… at a glance!
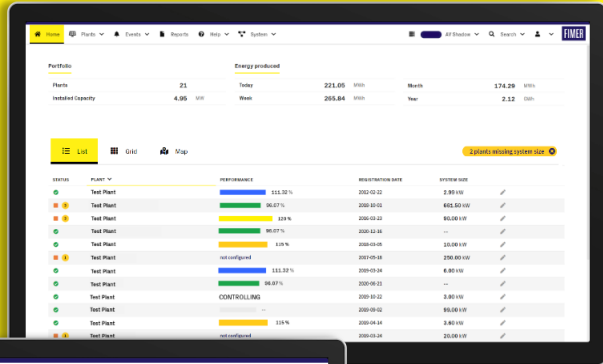
List View

View the status and performance of solar plants, together with the main information. Shortcuts and dedicated filtering complete the package.
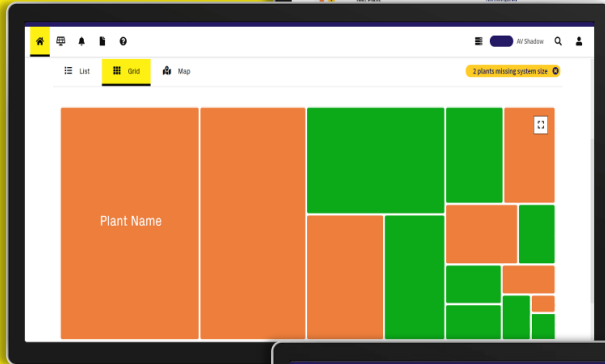
Grid View

Have an overview on the dimensional ratio of your registered plant, alongside their current status.
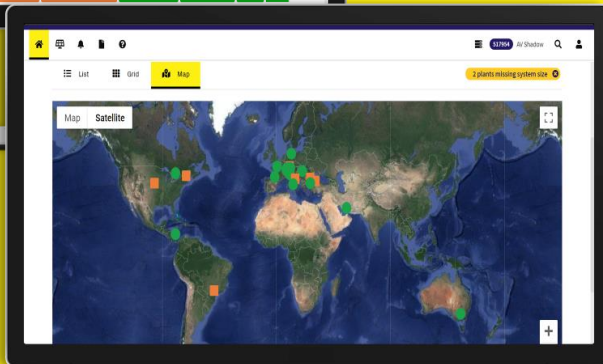
Map View

Focus on the geographical position of your plants and check their current status. Dedicated quick links enables shortcuts to the main dashboards.

Plant Performance

Keep an overview on the main information of a solar plant...
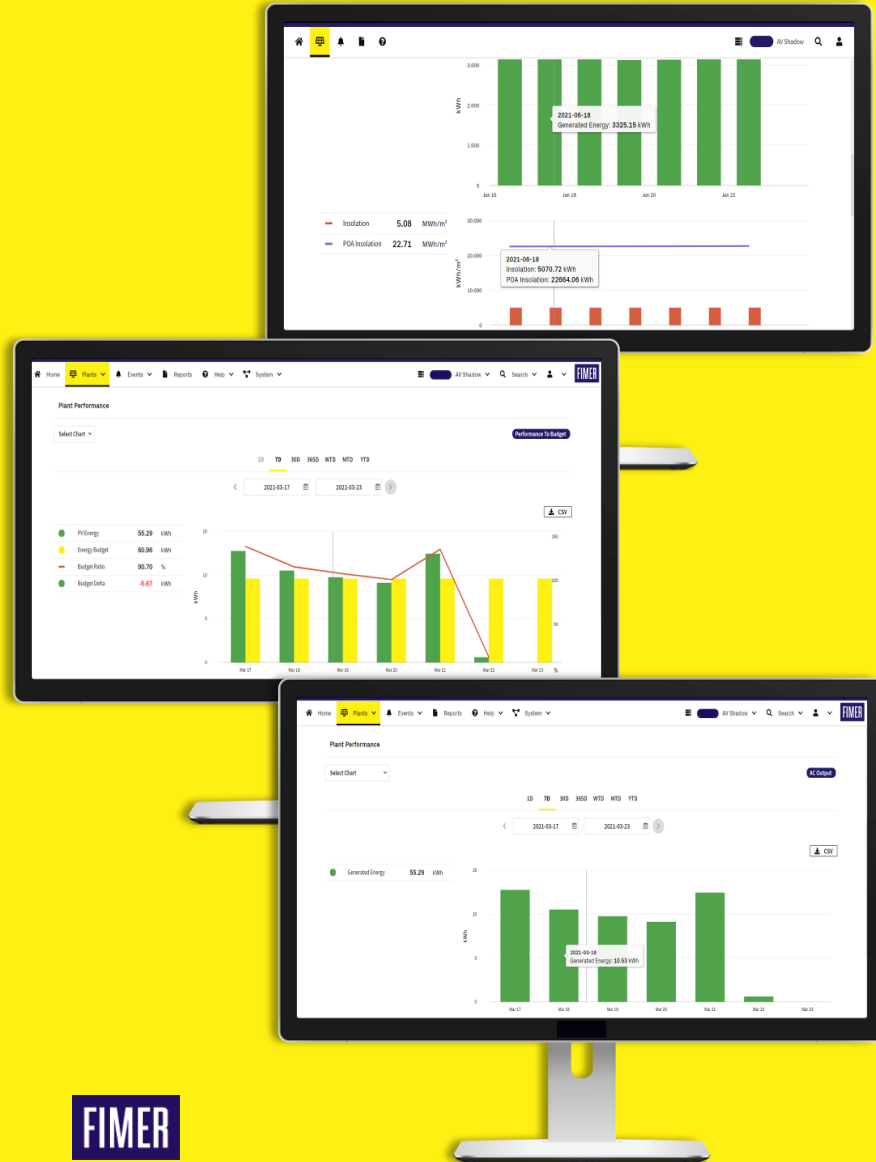
Focused Information

View the main registration info of the plant, its status, the energy produced over time and the weather forecast

Plant Level Charting

Stackable charts allows for simultaneous consultation of: Solar Generation, Performance to Budget* and/or Performance Ratio*, compatible sensors installed

Data Downloads

Take advantage of the dynamic data download function in CSV, which adapts according to the charts selected by the user

Environmental Benefits

Keep track of the environmental benefits your plant has generated

*Feature activation from the [Management] page required.
Compatible sensors are required for the Performance Ratio algorithm.

Device Performance

…or go into the details of the individual devices

⚠ Identify Issues

In-depth analysis of assets such as: inverters, meters, batteries, string combiners, weather stations. Rapidly identify and resolve issues to optimize operation and maintenance.

↕ Device Selection

Check the main information on the individual devices and decide which of them to chart and analyze, through a clear, intuitive and filterable list

Device Level Charting

Compare and analyze device trends in-depth through customized time windows, allowing you to zoom-in on details. Charts can be stacked for seamless consultation

⬇ Data Downloads

Take advantage of the dynamic data download function in CSV, which adapts according to the charts selected by the user

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Explorer
An interactive hierarchical view of your portfolio

🕐 Quick Navigation

Navigate dynamically through the hierarchical levels of the registered plants and devices, in order to access information and available actions

📋 Lifecycle Management

Manage the state of registered entities, thus having complete freedom of action on the visualization of data and on the physical registrations of devices

🧩 Devices Registration

Register new devices under an existing plant, through a MAC Address or a Serial Number, to start the auto-provisioning process
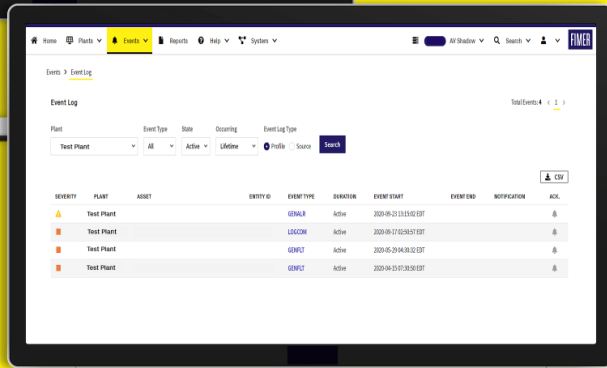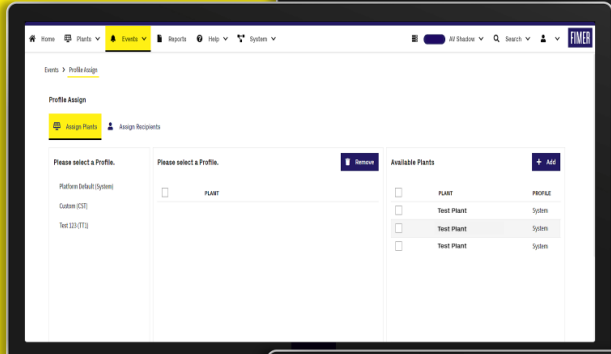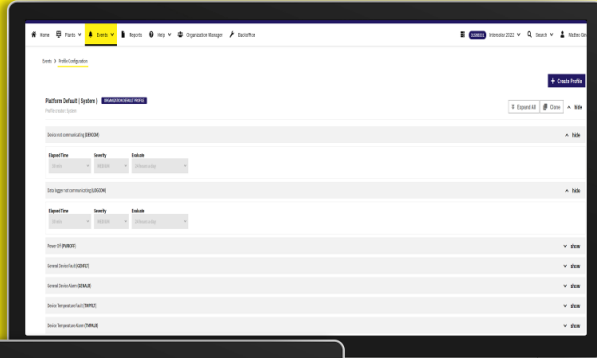
☁ Firmware Updates

Remotely approve the firmware update of the inverters or the check the update history for the different inverter slots
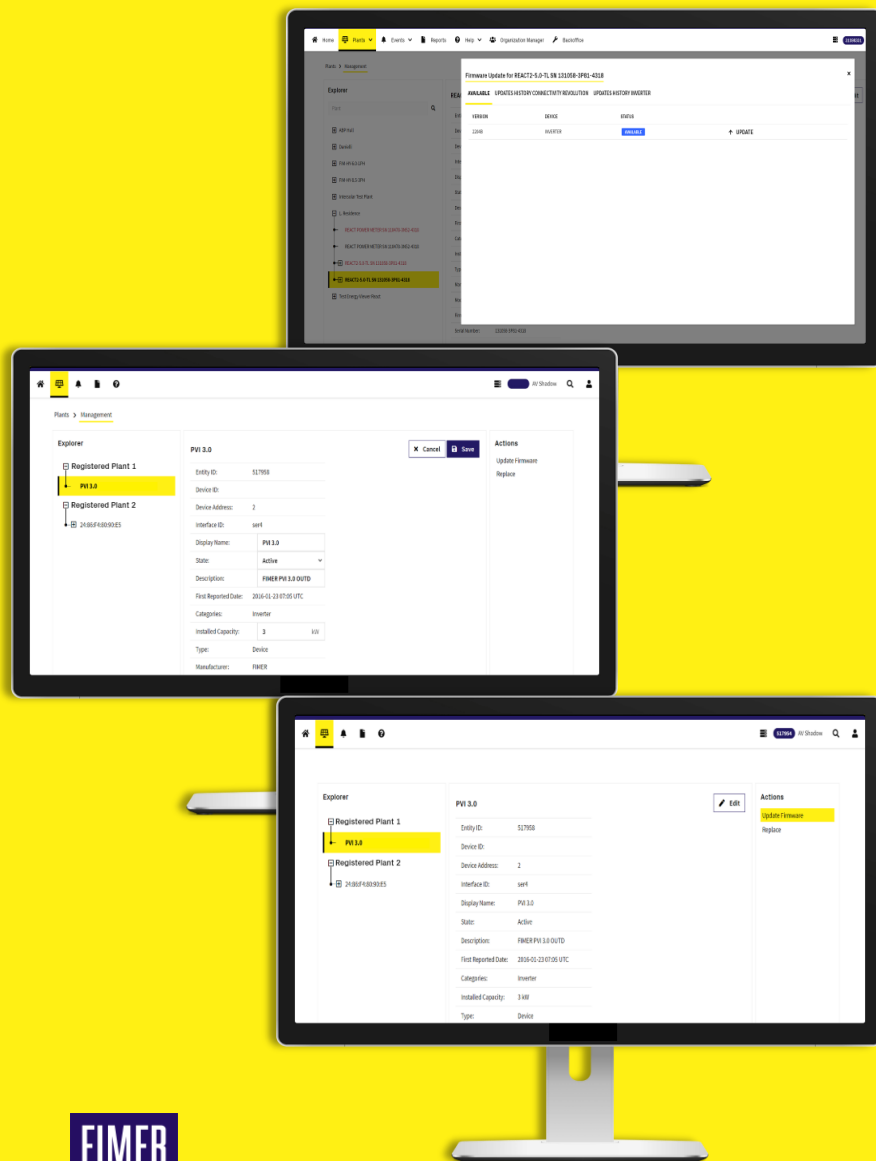
Events

Manage error profiles for robust alarming

Configure Profiles

Create and customize error profiles by modifying the settings of the individual error categories in detail in order to choose the evaluation time, elapsed time, thresholds and severity

Assign Profiles

Assign different error profiles to different plants registered on your portfolio, in order to define dedicated control routines

Analyze Event Logs

Consult the event log* in order to see active and closed events and use multiple filters ranging from: time slices, error type, event severity, status

Notify Stakeholders

Create e-mail recipients and assign them to error profiles or individual plants, associated with the latter, thus being able to alert stakeholders on active events with a certain severity

*A plant must be correctly assigned to a Profile Error in order to have an event log populated.

FIMER

13

Reports
Custom and scheduled reporting

Define Criterias

Create reports at plant or device level, selecting one of the available templates or customizing it independently
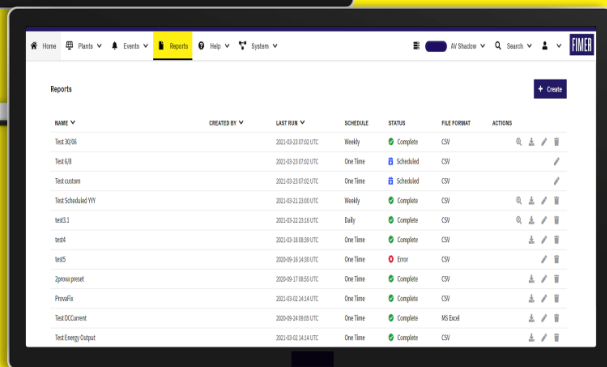
Identify KPIs

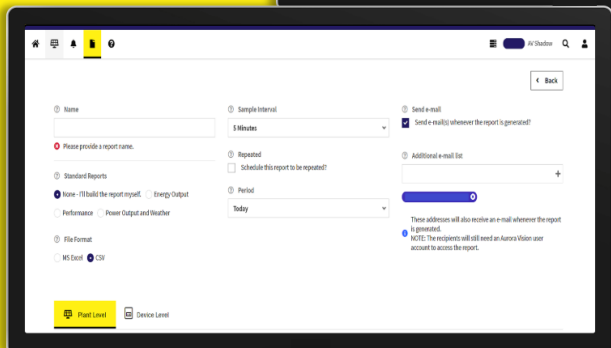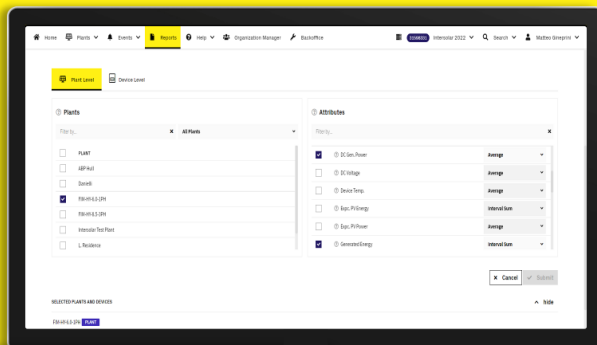Choose the type of data to be included in the report, in order to define KPIs and perform in-depth analysis

Select Timeframes

Decide whether to launch the report once or schedule it over time, with the possibility to select the time window and the granularity of the data

Notify Stakeholders

Create e-mail recipients and assign them to reports, thus being able to keep stakeholders aligned

Administration Tools

Easily manage users, plants, portfolios

Administer Users

Create new users or use users already registered on *Aurora Vision*® (*not belonging to other portfolios*) by assigning them a specific role and, freely, a specific plant group

Administer Plants

Create and manage plant, thus going to have a divided management of your portfolio and being able, at the same time, to assign users to certain groups based on specific preferences

Administer Portfolios

* Create and administer portfolios, according to your specific criteria, within your organization to manage a high extension of solar plants; assign users at the organization or portfolio level

*The existence of an Organization is currently limited to specific use cases and can only be configured by FIMER Customer Support

KIOSK View

Share publicly your achievements

Customizable

Choose (*among predefined options*) what to show and whether to insert a custom logo or not.

Shareable & Secure

A public view that does not need an Aurora Vision account. Share it via link or directly embed it to external pages thanks to the <iframe> HTML5 tag. Designed to protect user information, cutting out XSS attacks.

KIOSK View 2.0

We are working on a new version of KIOSK View, which will reflect the information and configurations present on Energy Viewer. High customization, simplicity, speed.
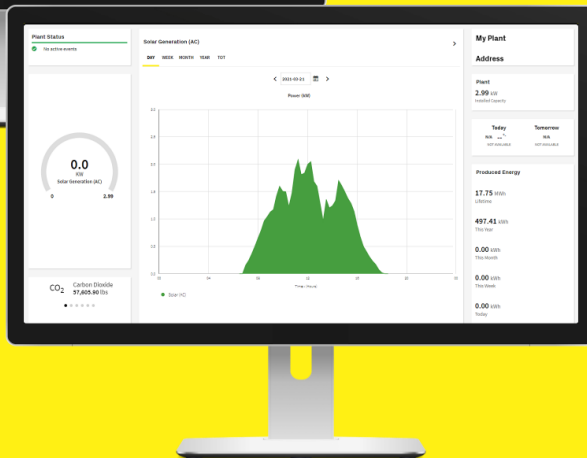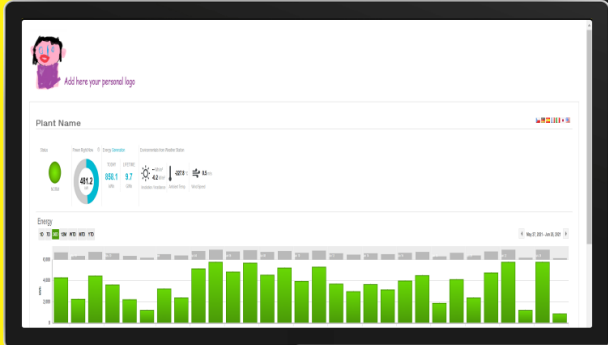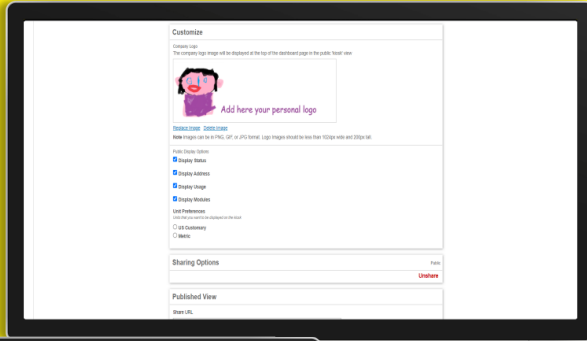
Plant Portfolio Manager

The incredible becomes easy

A MONSTER OF ANALYTICS... BUT CAN BE SOCIABLE

Plant & Device level telemetries and performances

HOME SWEET HOME

At-a-glance information on one page

THE VIEW FROM UP HERE IS FANTASTIC

A public and customizable KIOSK View

QUESTION OF PRIVILEGES
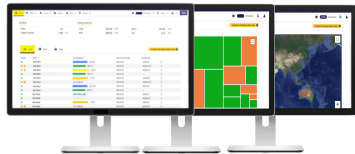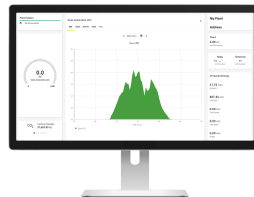
Administrators and Installers access only!

PRICELESS

Standard access is free... for life!

REPORTING HAS NEVER BEEN SO GOOD
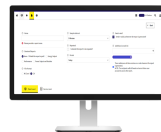
Generate custom and scheduled reports for billing, finance and customers

DISCOVER MORE!

THE PROFILE OF A BEAUTIFUL PLANT

Define, customize and assign error profiles... then notify everything by email.

HIGH LEVEL EXPLORATION

PLANT NAME
FIMER INVERTER
COMPATIBLE METER

Explorer page for managing inverters, loggers, weather stations, meters... assets!

A CUDDLE FOR YOUR CUSTOMERS
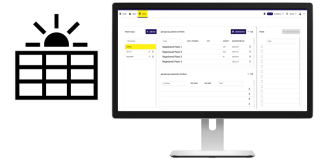
Administration tools to manage plants and customer accounts for your entire portfolio

FIMER

Energy Viewer

The habit of monitoring comes to your home

FIMER
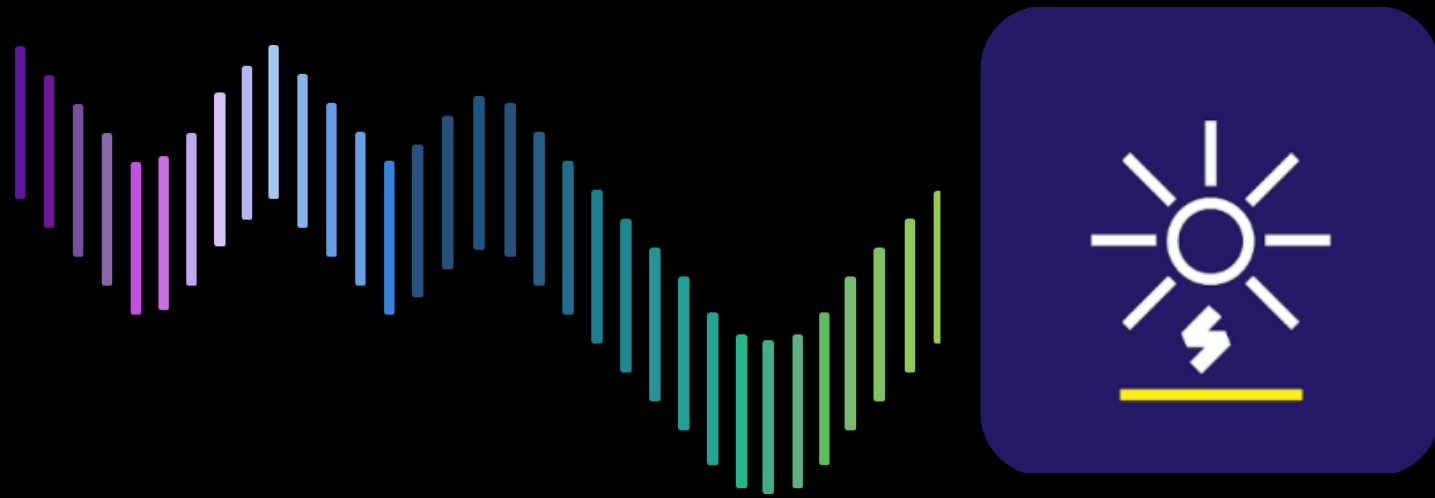
Energy Viewer
Overview

A smart product that allows solar power plant owners to easily and remotely monitor their system's output and home's consumption, keeping their energy use and savings in check, with or without an energy storage system installed.

Dynamically Adaptable

Energy Viewer dynamically adapts to the physical configuration of your plant: inverters, meters, storage, charging stations!

Comprehensive Monitoring

Always keep an eye on your home's consumption, thanks to dedicated dashboards and KPIs

E-Mobility Integration

Thanks to the compatibility with FIMER FLEXA AC Wallbox you can configure and manage your e-Car, thus remotely monitor charging process and trends

In-App Notifications

Plant in-app status notification for monitoring active and closed events, and remote firmware updates
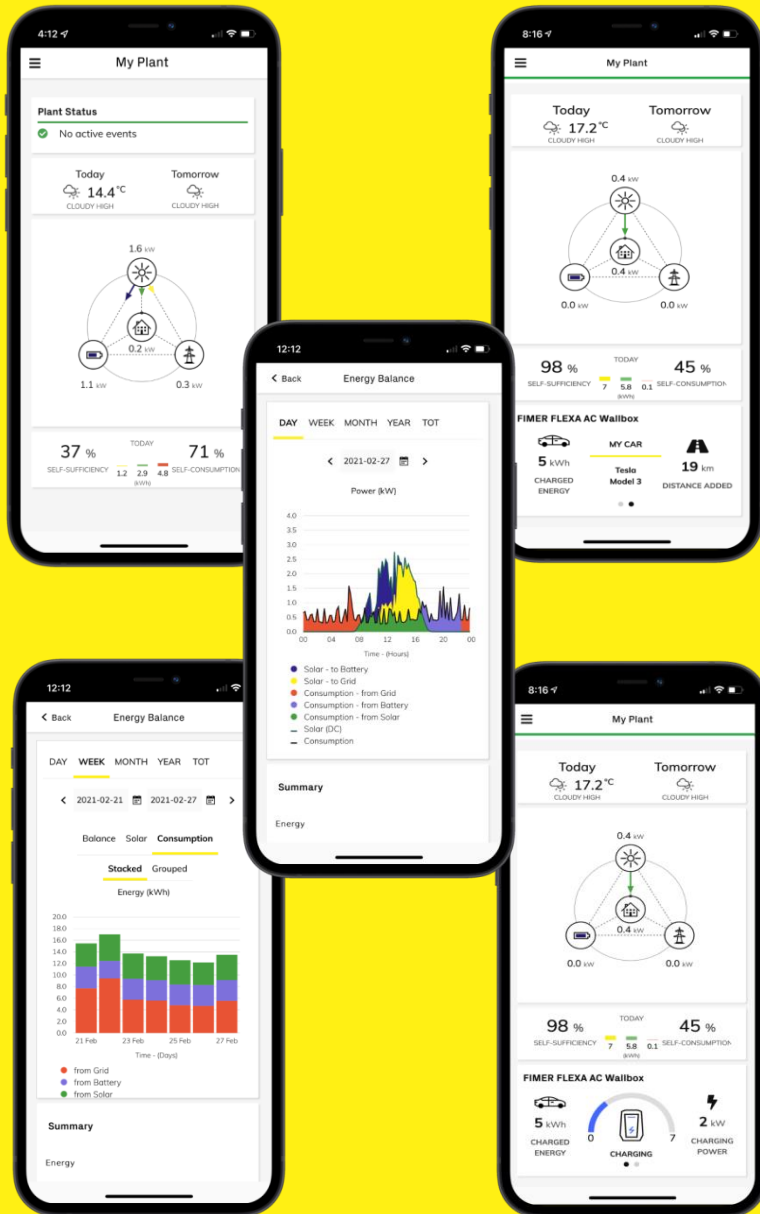
Basic Configuration

Dynamic adaptation based on physical plant configuration

One or more FIMER inverters installed, allow the user to remotely monitor the main production telemetries. In case of multiple inverters registered under the same plant, Energy Viewer will show a plant-level aggregate of the telemetries.

Solar Generation (AC)

FIMER Solar inverter

Home Loads

Utility meter

Grid

- - - - Communication Path
——— Current Path

Limited Configuration

Dynamic adaptation based on physical plant configuration

One or more FIMER inverters and compatible* meter(s), allow the user to remotely monitor the main production and home-consumption telemetries. The configuration is limited to monitoring during the daylight because the inverter logic switches off at night, thus not sending data to Aurora Vision.
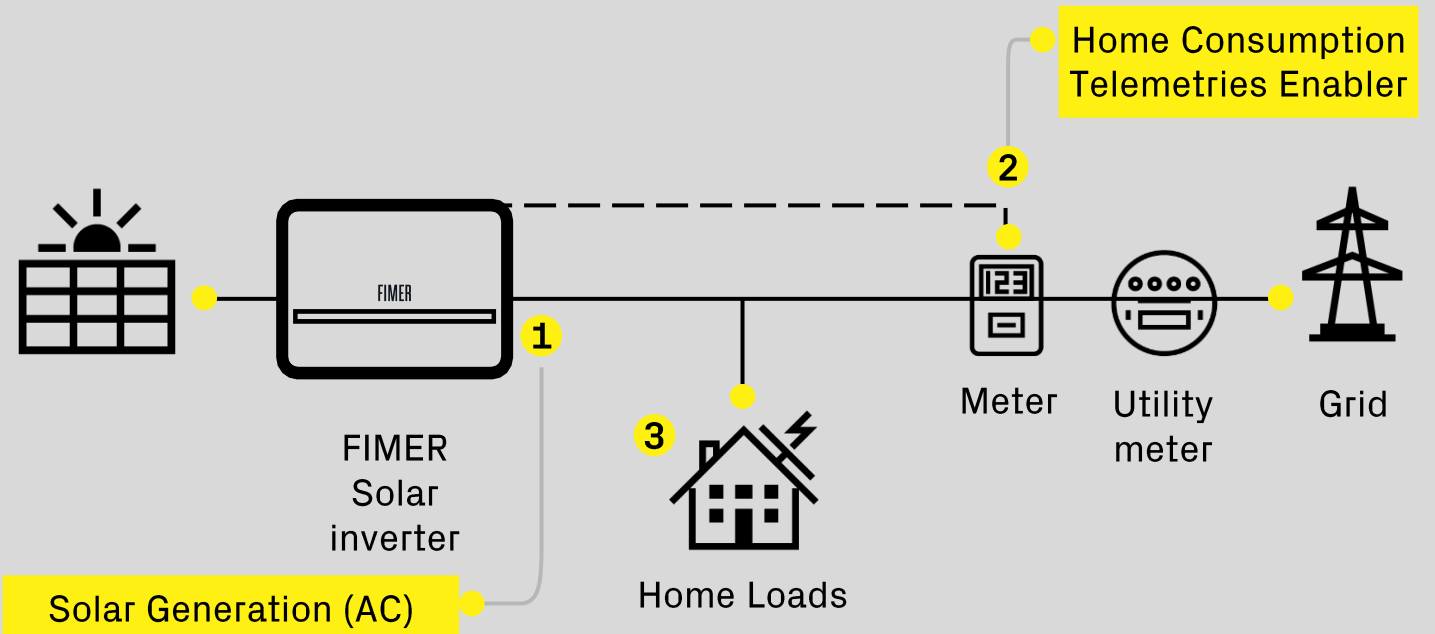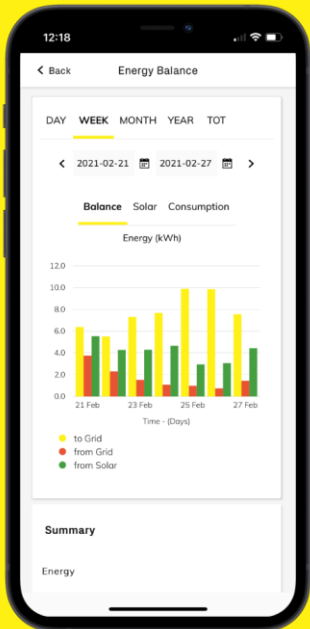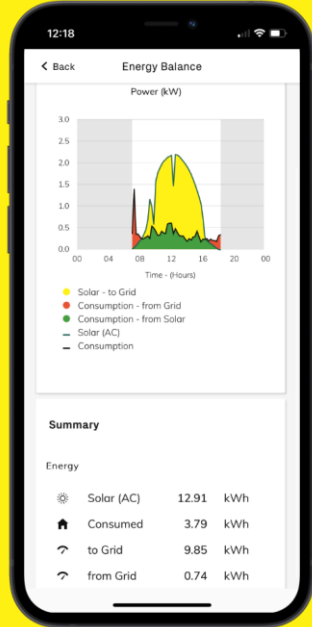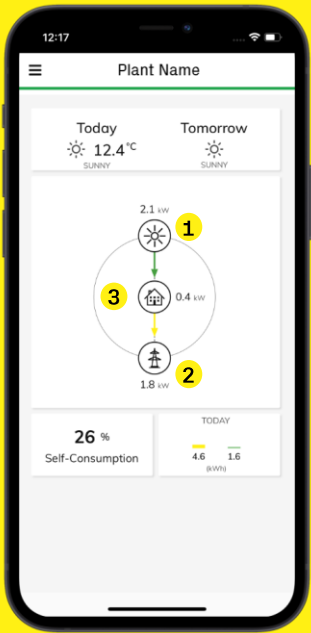
Home Consumption Telemetries Enabler

2

Meter **Utility meter** **Grid**

1

FIMER Solar inverter

3

Home Loads

Solar Generation (AC)

- - - - Communication Path
———— Current Path

* List available at:
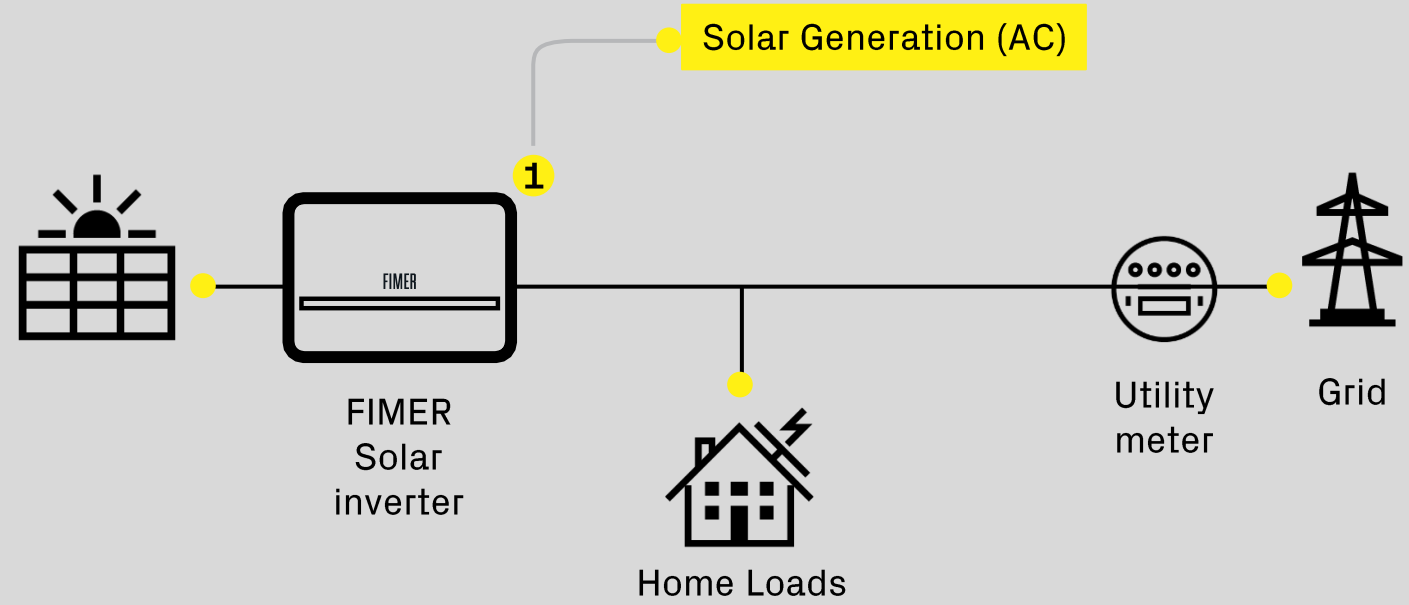https://www.fimer.com/sites/default/files/FIMER___Meters%20supported%20by%20FIMER_EN__Rev.B.pdf
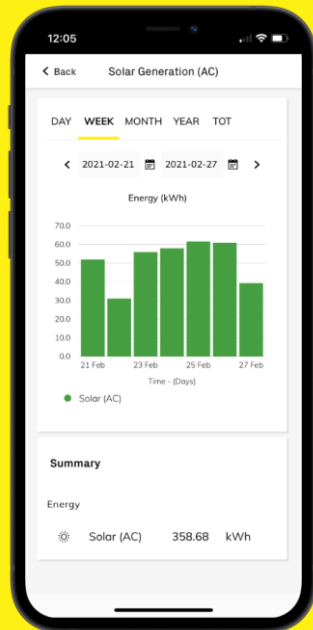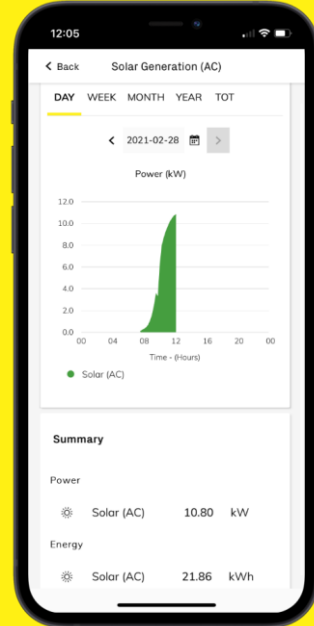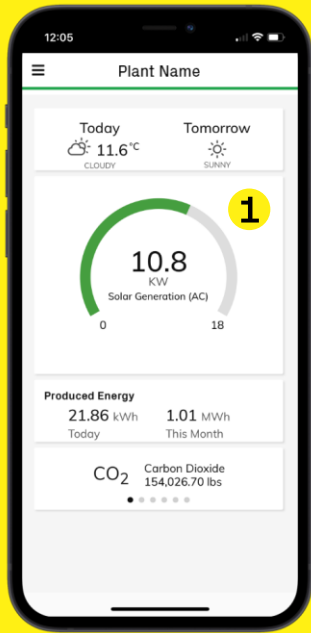
Standard Configuration

Dynamic adaptation based on physical plant configuration
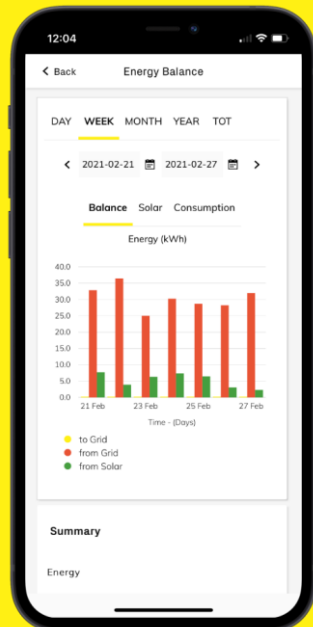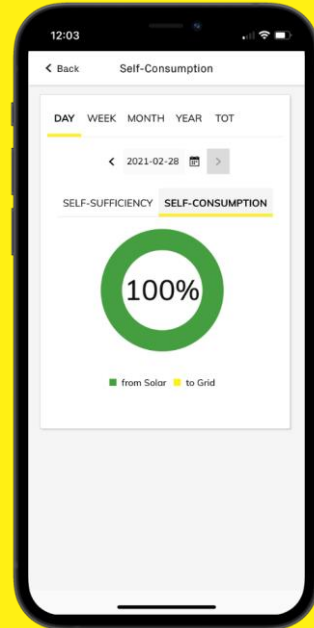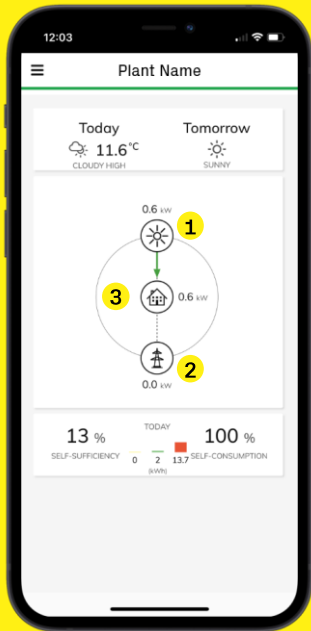
One or more FIMER inverters and compatible* meter(s), allow the user to remotely monitor the main production and home-consumption telemetries. The configuration allows monitoring 24/24h because the inverter logic is always on.

VSN 700-05 *

Home Consumption Telemetries Enabler

2

1

FIMER Solar inverter

3

Home Loads

Meter

Utility meter

Grid

Solar Generation (AC)
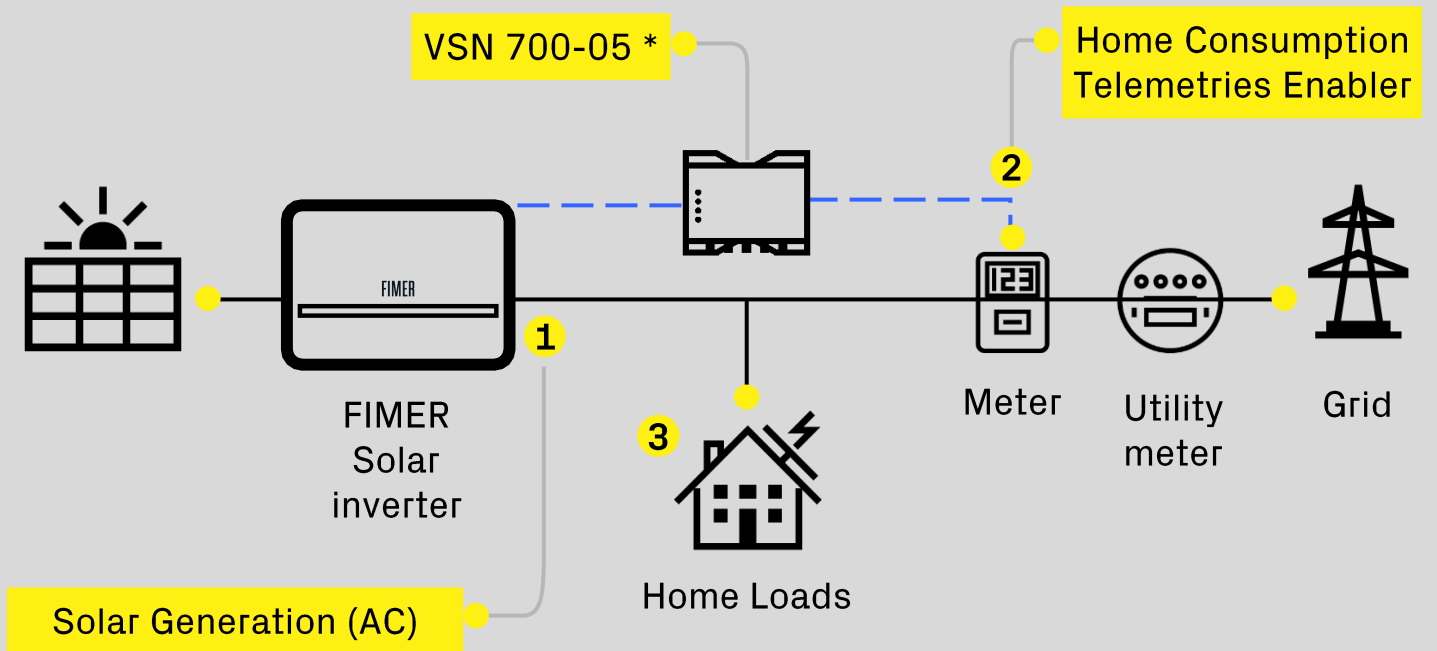
- - - - Communication Path
———— Current Path

* VSN 700-05 additional and non-mandatory accessory for remote monitoring. Designed only for commercial scale systems and for monitoring telemetries 24/24 in case of inverters with logic that turns off at night.

Full Configuration

Dynamic adaptation based on physical plant configuration

One or more FIMER inverters, compatible* meter(s) and ESS (*Energy Storage System*) allow the user to remotely monitor all the available telemetries. The configuration allows monitoring 24/24h because the inverter logic is always on.

Home Consumption Telemetries Enabler

Battery Telemetries

1
2
3
4

FIMER Hybrid Inverter

Home Loads

Meter

Utility meter

Grid

- - - - Communication Path
———— Current Path

* List available at:
https://www.fimer.com/sites/default/files/FIMER___Met ers%20supported%20by%20FIMER_EN_Rev.B.pdf

23
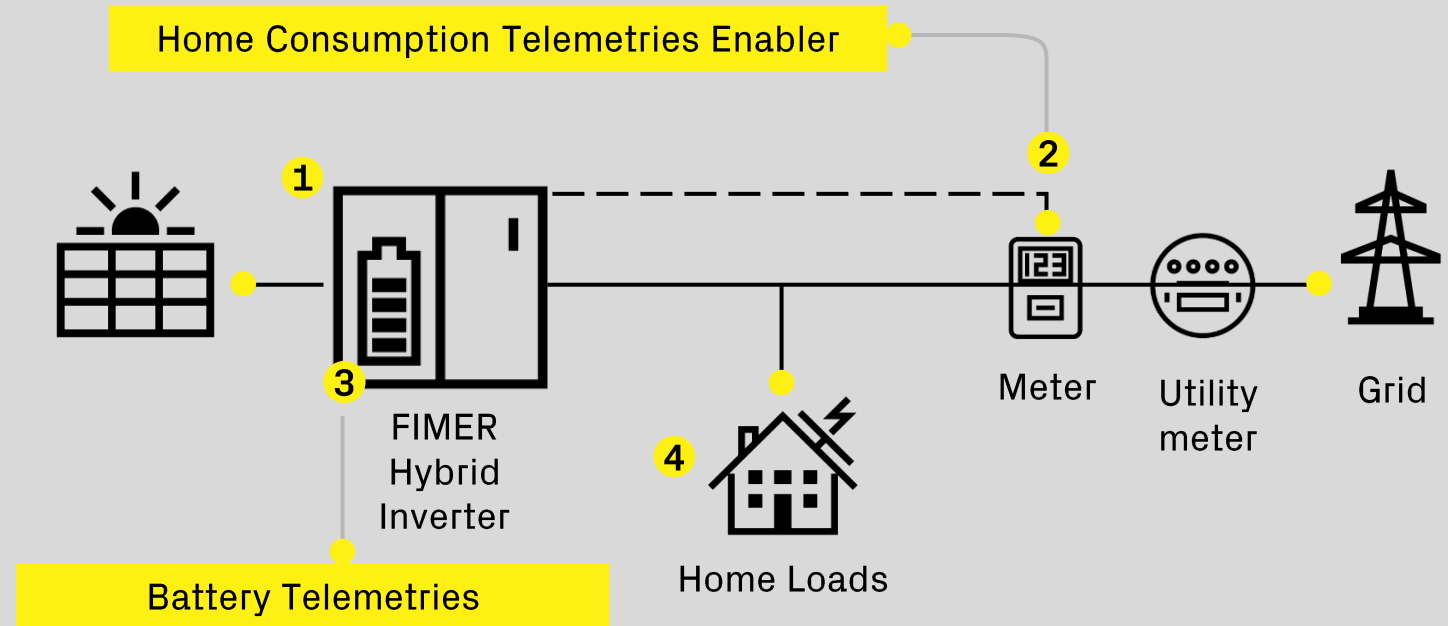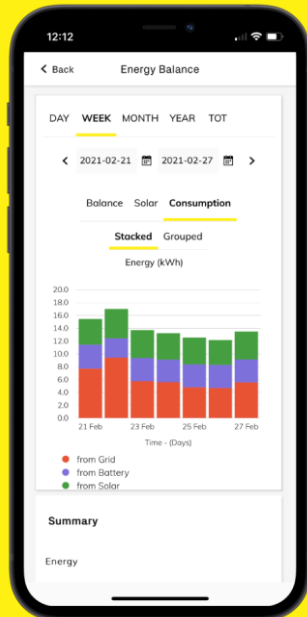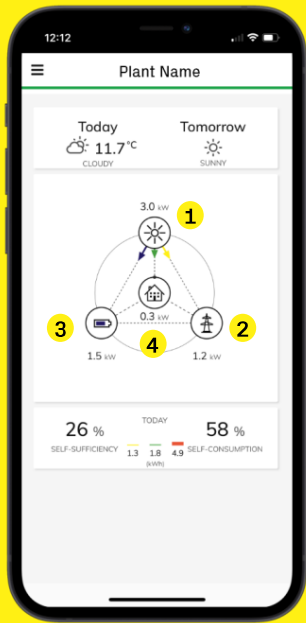
DC/AC Coupling Configuration

Dynamic adaptation based on physical plant configuration
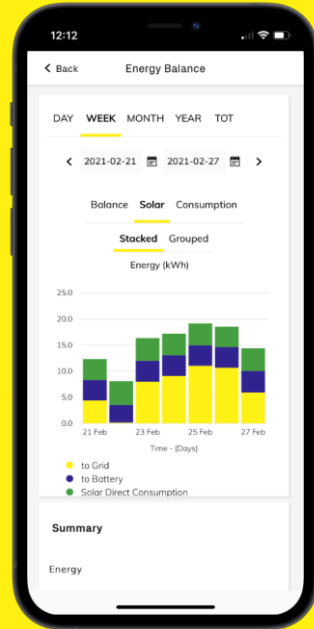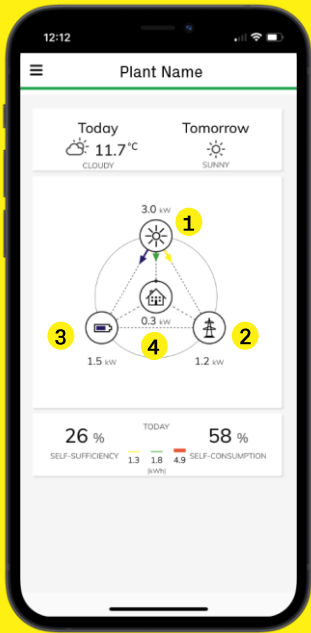
One or more FIMER inverters on DC Coupling, a FIMER inverter compatible with AC Coupling and ESS (*Energy Storage System*) management, compatible* meter(s) allow the user to remotely monitor all the available telemetries.
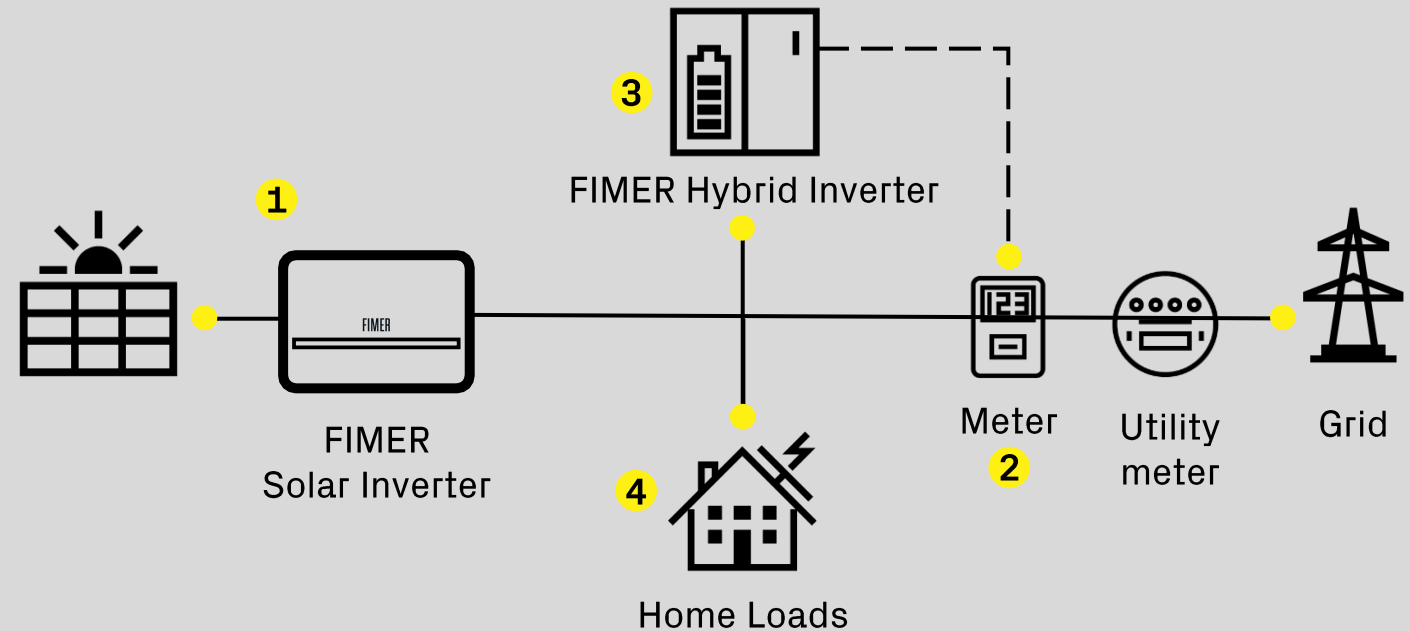
3 FIMER Hybrid Inverter

1 FIMER Solar Inverter

4 Home Loads

2 Meter

Utility meter

Grid

- - - - Communication Path
——— Current Path

* List available at:
https://www.fimer.com/sites/default/files/FIMER___Met ers%20supported%20by%20FIMER_EN__Rev.B.pdf

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e-Mobility Integration

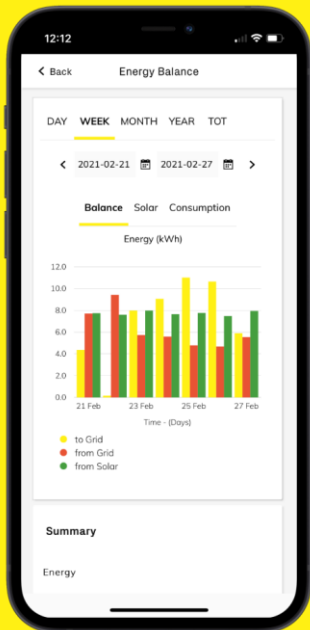## A seamless experience that combines Solar and EVI
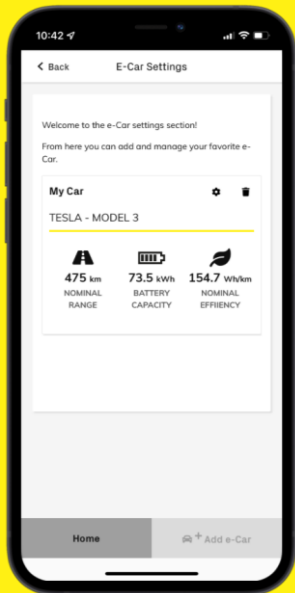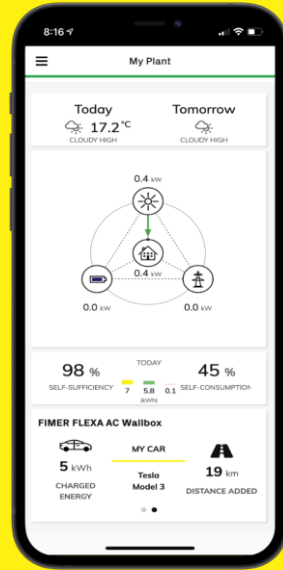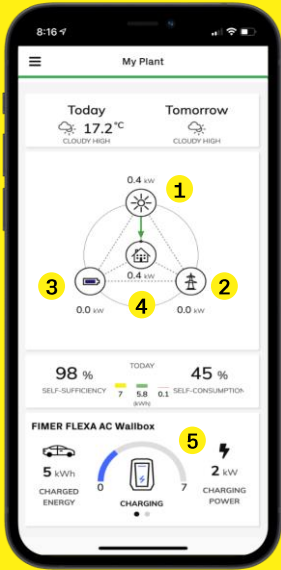
Enter the new era of EVI thanks to an integrated solution with **FIMER REACT2 & FIMER FLEXA AC Wallbox**:

- Remotely monitor the charging process and the status of FLEXA;
- Observe past charging trends, thanks to the integration with *Aurora Vision®* ;
- Configure and manage your favorite e-Car to know the main nominal data while charging;

FIMER Hybrid Inverter

Home Loads

Meter

Utility meter

Grid

Flexa AC Wallbox

- - - - Communication Path
——— Current Path
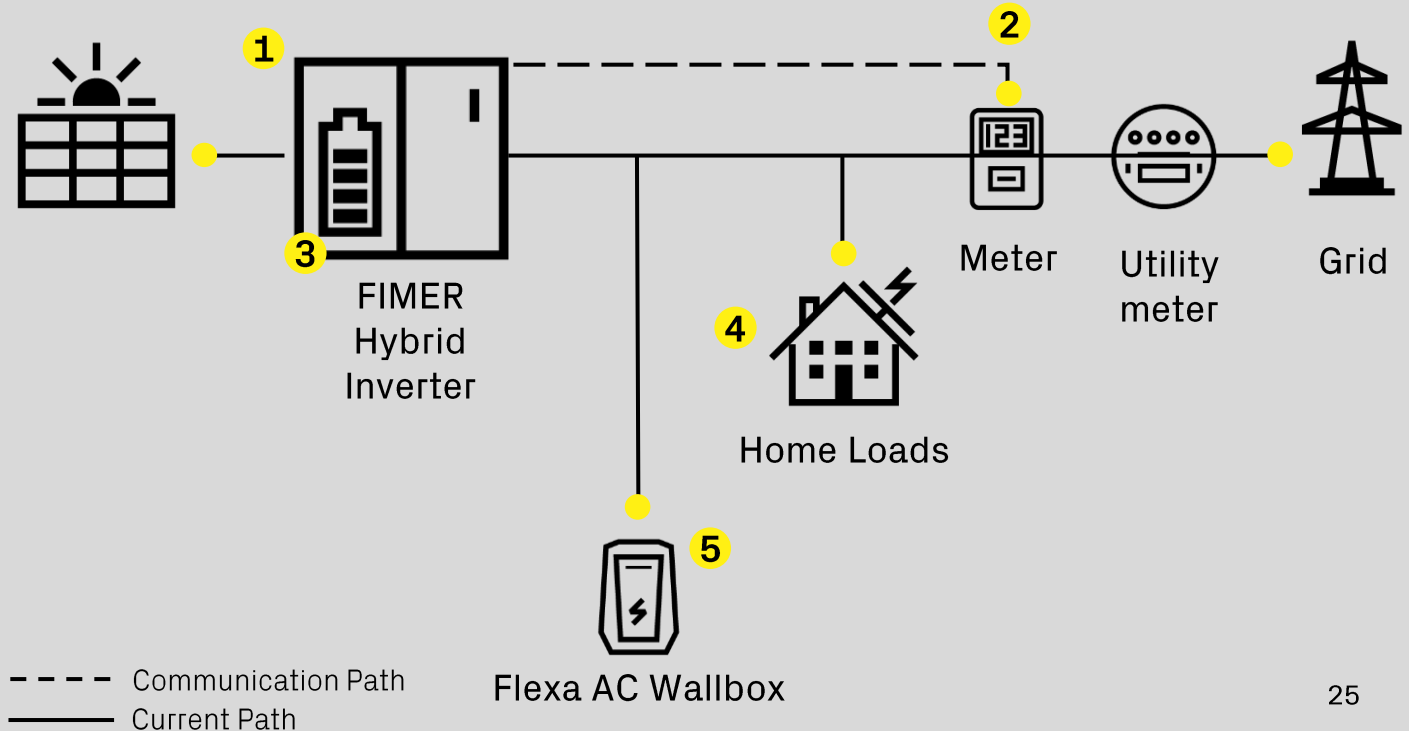
Energy Viewer
The habit of monitoring comes to your home

DYNAMICALLY ADAPTABLE to ANY plant configuration

GET IT ON **Google Play**

Download on the **App Store**

LOOK AT THESE PERFORMANCES!

26% | 26 % TODAY 58 % | 58%
SELF-SUFFICIENCY | 1.3 1.8 4.9 (kWh) | SELF-CONSUMPTION

SAVINGS ALWAYS IN CHECK

REAL TIME UPDATES
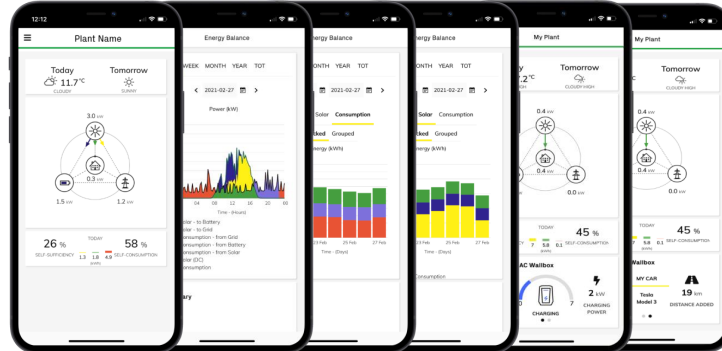
REGISTER BY YOURSELF...
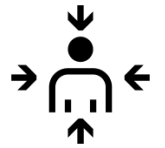
Plant Registration Wizard included

android
From v7.0 (*Nougat*)

FLOWS LIKE A CHARM
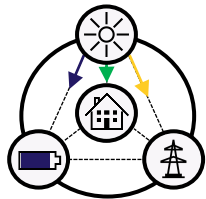
Production, domestic consumption, batteries... flows for all tastes!

DISCOVER MORE!

...OR RELAX WHILE YOU ARE REGISTERED

Rely on the installer, Aurora Vision will take care of the rest.

iOS **iPadOS**
From v11.0

SEAMLESS e-MOBILITY INTEGRATION

FIMER FLEXA AC Wallbox

5 kWh CHARGED ENERGY | 0 CHARGING 7 | 2 kW CHARGING POWER

FIMER FLEXA AC Wallbox

5 kWh CHARGED ENERGY | MY CAR Tesla Model 3 | 19 km DISTANCE ADDED

PRICELESS

Free... for life!
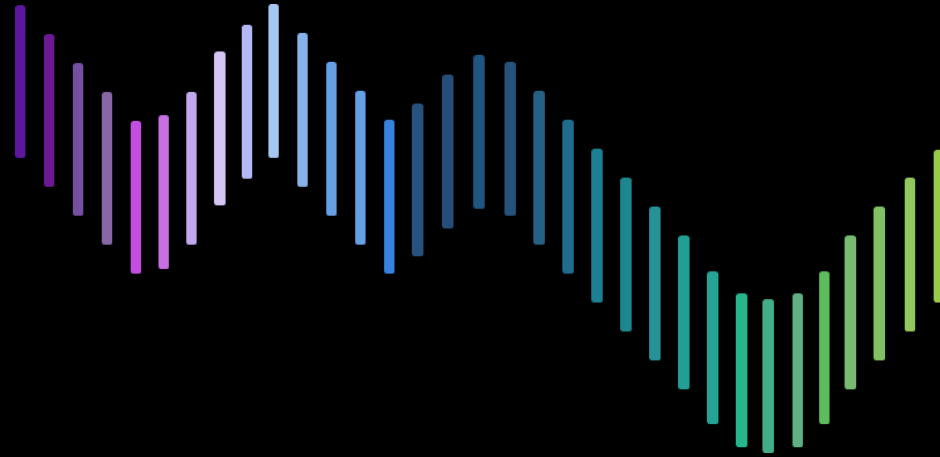
FIMER

RESTful APIs

Take a leap into the future

FIMER

RESTful APIs
Overview

GET RAW data from different suites, related to FIMER photovoltaic systems and compatible devices (*properly registered on Aurora Vision**), from the cloud and leverage their power to design solutions and provide opportunities through a RESTful architecture.

FIMER Inverter   Compatible Devices   EVI   Smart Home

Aurora Vision
RESTful APIs Service
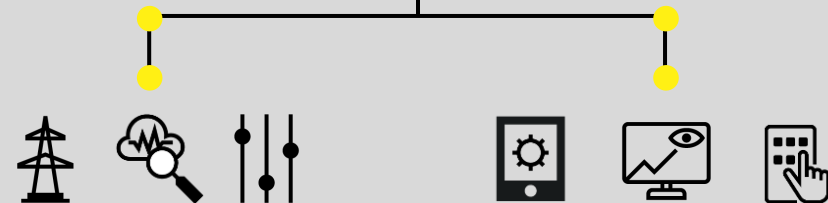
Grid Operators & Utility   3rd Party Development

* A correct registration of the devices on Aurora Vision is required, alongside with a correct communication of the inverter/logger with the cloud platform

RESTful APIs
Make room for security

The Aurora Vision APIs service is designed to be secure and scalable: the user's credentials and associated assets are always checked, in order to guarantee data extraction from the cloud only for those devices to which the user really has access to.

3rd Party Client

Aurora Vision User

User's Assets

User's Api-Key

Aurora Vision RESTful APIs Service

RESTful Architecture

Leverage the cardinal principles of RESTful architecture: resource identification, explicit use of HTTP methods, self-describing resources, stateless communication

Dedicated Controls

The *X-AuroraVision-ApiKey* is linked to the related assets registered by the user. This guarantees robust controls: the user will only be able to access data of the assets that he actually has access to

Dedicated Authentication

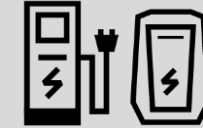With a validated Aurora Vision account you can request an *X-AuroraVision-Api-Key*, which is uniquely linked to the user. The key is the header parameter to run the GET Authentication API, that allows the release of the *X-AuroraVision-Token* in order to enable the user to make API calls.

* At the moment, the X-AuroraVision-ApiKey can only be released by FIMER Customer Support: https://www.fimer.com/contact/contact-us

FIMER

RESTful APIs: meeting all requests

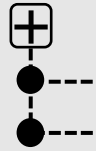An all-encompassing offering that contains multiple types of suites and APIs to meet all needs:

Hierarchical Scalability

Retrieve info on Aurora Vision's assets and scale up or down the hierarchy by listing: portfolios, plants, loggers, devices

Telemetries Aggregation

Retrieve, at plant or device level, aggregated telemetries, with custom timeframes, like: power, energy, current, voltage and much more

Telemetries Sampling

Retrieve, at plant or device level, timeseries telemetries with custom timeframes and sampling time

Key Performances

Retrieve the main KPIs, aggregated or timeseries, to estimate the performances of a plant: Self-Sufficiency, Self-Consumption, Self Consumed Power, Self Consumed Energy and much more
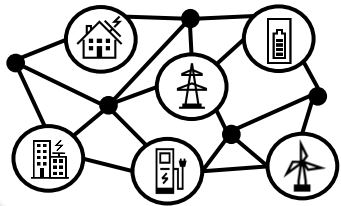
Assets State Management

Retrieve information based on the state of an asset or create behavioral trees by analyzing the error events that have affected assets of interest
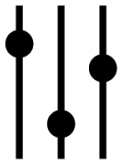
Aurora Vision® RESTful APIs

Take a leap into the future

AGGREGATE, PREDICT, MANAGE

Leverage data to take your solutions towards the future of energy management and Virtual Power Plants.

ALL TASTES... PLUS ONE!

Data recovery, inverter parameters remote control... there is something for everyone!

POWER UP YOUR KNOWLEDGE

Train Deep Neural Networks or power up your own customized product

FIMER INVERTER

EVI
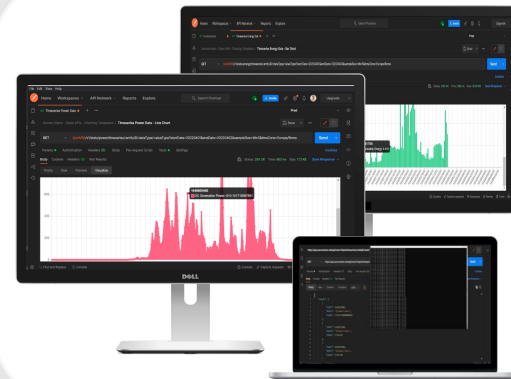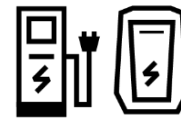
COMPATIBLE DEVICES

SMART HOME

ONE BLOCK AFTER ANOTHER

Leverage the computational power of Power Platform to manage energy quantum exchanges through blockchain

DISCOVER MORE!

ELIMINATE INTRUDERS, MAKE ROOM FOR SECURITY

PRICELESS

Standard access is free... for life!

HTTP protocol nested on TLS for encrypted HTTPS connections

FIMER

Aurora Vision

Account creation principles and flows

FIMER

Aurora Vision: a matter of privileges

Aurora Vision uses a Role Based Access (RBA) system to discriminate which products and features the user can access. The system redirects the user based on his Privilege Role, which is assigned only after completing a registration or assignment operation.
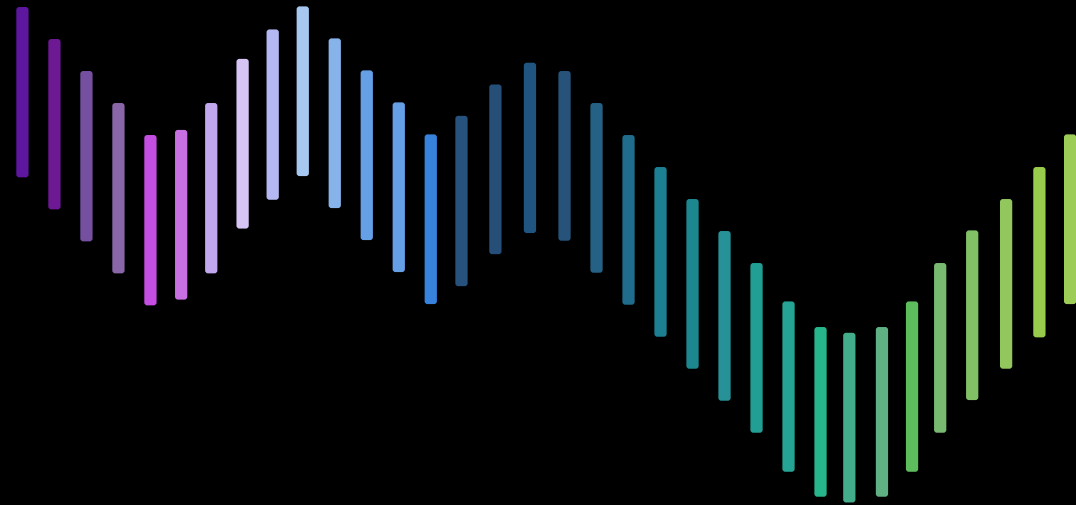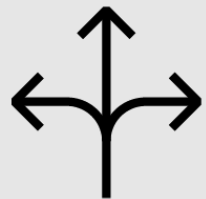
Role Based Access*

Based on the account privileges, Aurora Vision determine to which products and features the user will be redirected

	▣ Plant Portfolio Manager	☀ Energy Viewer
Administrator	✔ Access to all features	✔ Access to all features
Site-Owner	✘ No access	✔ Access to all features
Installer, Operator	✔ Access to target features	✔ Access to all features

Administrator

Solar professionals (*EPCs or O&M managers*) aiming to administrate an entire portfolio of solar plants as well as managing the accounts for final customer and collaborators

Site-Owner

Proprietary of the solar plant aiming to use Energy Viewer for monitoring all the main energy-flows and self-performances

Installer, Operator

Technician in charge of installing the owner's solar plant and creating an Aurora Vision account for the latter

FIMER * RESTful APIs service not affected by RBA system

Administrator
How to obtain the privilege role

An Aurora Vision account with Administrator privilege role, can only be obtained by sending an official request to FIMER Customer Support and explicitly asking that you want to administer a fleet of solar plants with your own portfolio.
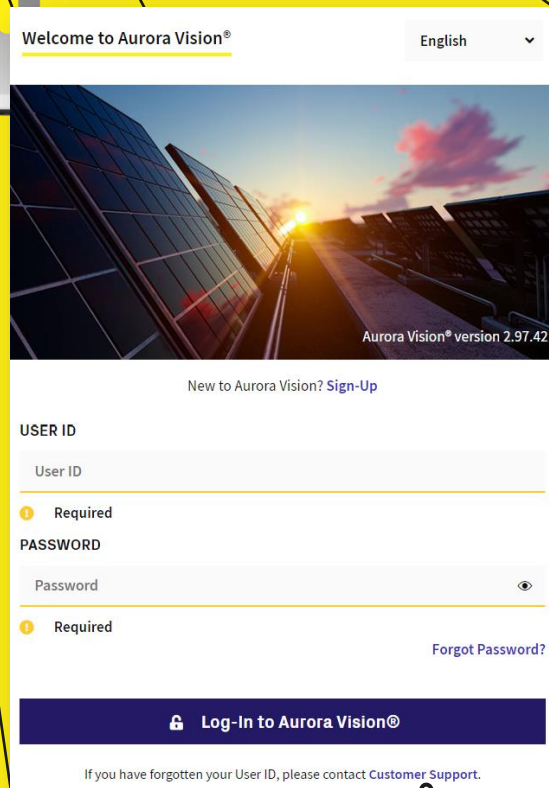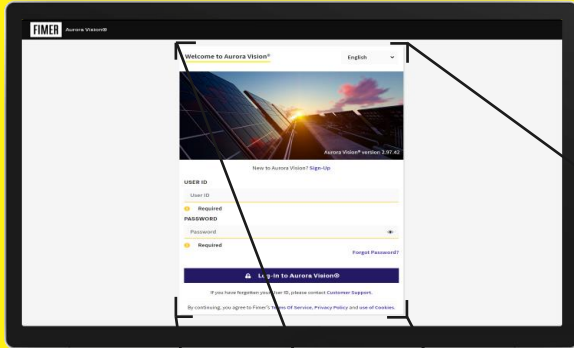
Contact Customer Support

On the Aurora Vision Log-In page, click on the Customer Support link in order to be redirected to the dedicated page. Alternatively, scan the QR-Code that you find here on the right side.

SCAN ME

## Already have an Aurora Vision account?

If you already Signed-Up on Aurora Vision, whether you have already registered your first plant or not, you must still contact FIMER Customer Support to obtain an account with an Administrator privilege role.

Installer, Operator

How to obtain the privilege role

An Aurora Vision account with Installer or Operator privilege role, can only be obtained through a portfolio Administrator, because it is the latter who manages the operations within the portfolio and has the rights to create accounts for his own collaborators.
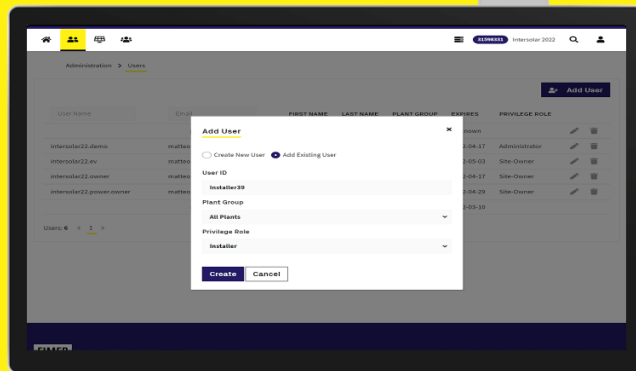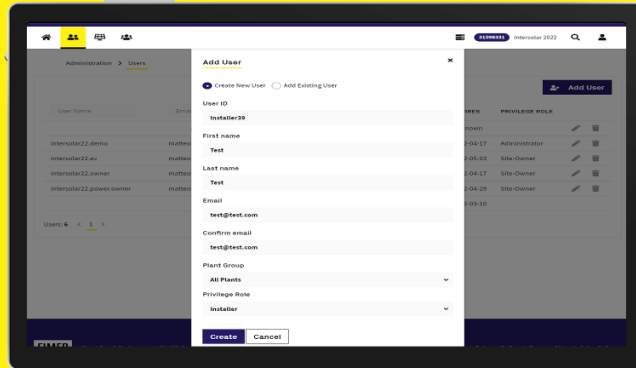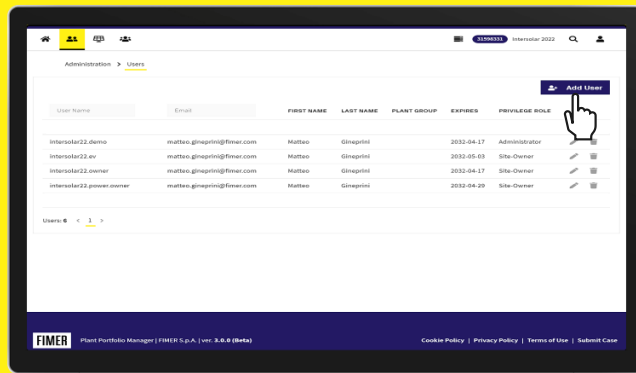
Contact Your Administrator

Contact your administrator and ask to create an account with privilege role Installer or Operator. The administrator can do this by adding a new user through the Users page inside the Administration section.

Already have an Aurora Vision account?

If you already Signed-Up on Aurora Vision, and you have not performed any plant registration operations*, you can contact your administrator and ask him to add your existing user to the portfolio.

* The existing user can be added only if no plant registration operations have been performed

Site Owner
## Exclusive and Collaborative monitoring

An Aurora Vision account with Site Owner privilege role can be obtained by following two different flows: based on the one chosen, it is possible to activate an Exclusive or Collaborative monitoring of a solar power plant.

Exclusive Monitoring

Only the plant owner, with his account with Site Owner privilege role, can remotely monitor the solar power plant

Collaborative Monitoring

Both the portfolio administrator and the plant owner, with their respective accounts and privilege roles, can remotely monitor the same solar power plant in parallel
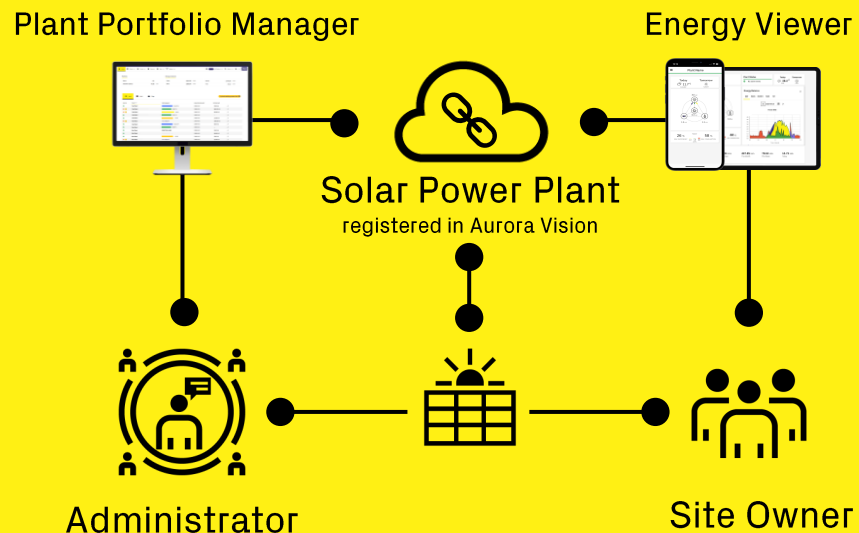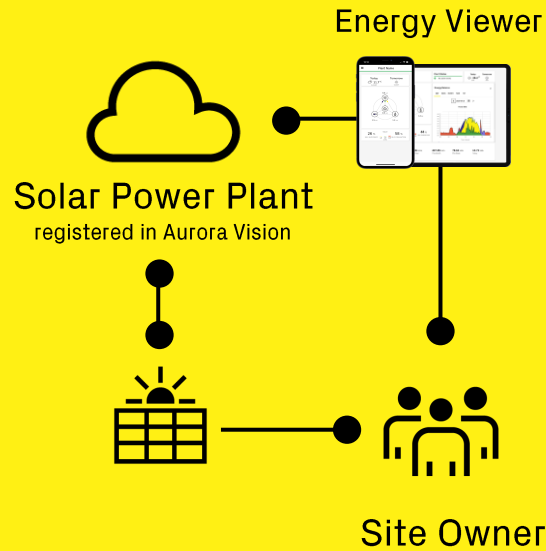
Site Owner
Exclusive Monitoring

An Aurora Vision account with Site Owner privilege role which enables Exclusive monitoring, can only be obtained by signing-up on Aurora Vision and, after accepting the conditions of the EULA, registering your solar plant and device autonomously through the Plant Registration Wizard.

Sign-Up to Aurora Vision

Click on Sign-up in the Log-In page and enter the requested information; once your account is validated you can login to Aurora Vision via Energy Viewer or web portal. If you need help, scan the QR-Code on the right.

SCAN ME

Register Plant & Devices

At the first login you will be prompted with the plant registration wizard. Follow the wizard and... all done! Now you have an account with Site Owner privilege role and you can remotely monitor your solar plant. If you need help, scan the QR-Code on the right.

SCAN ME
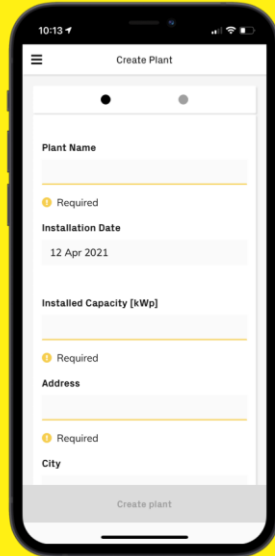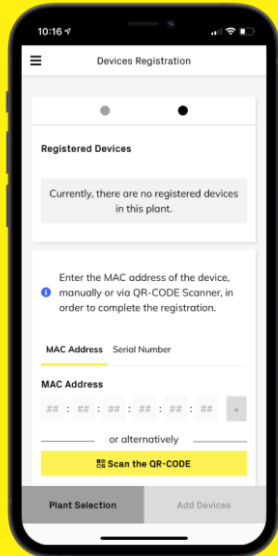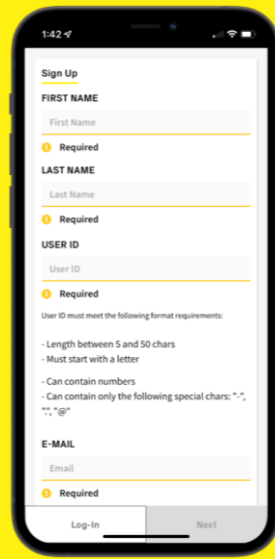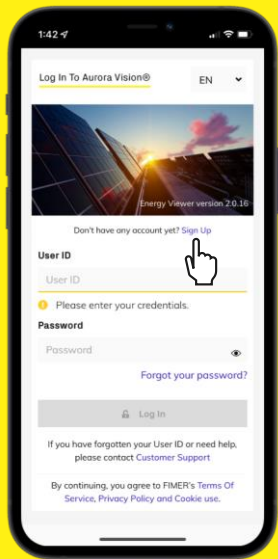
Site Owner
Collaborative Monitoring

An Aurora Vision account with Site Owner privilege role which enables Collaborative monitoring, can only be obtained through a portfolio Administrator: the latter will register the solar plant on Aurora Vision and will issue the credentials of the Aurora Vision account with Site Owner privilege; all on behalf of the plant owner.
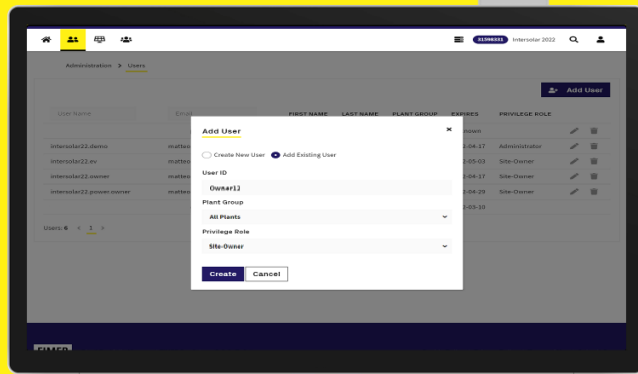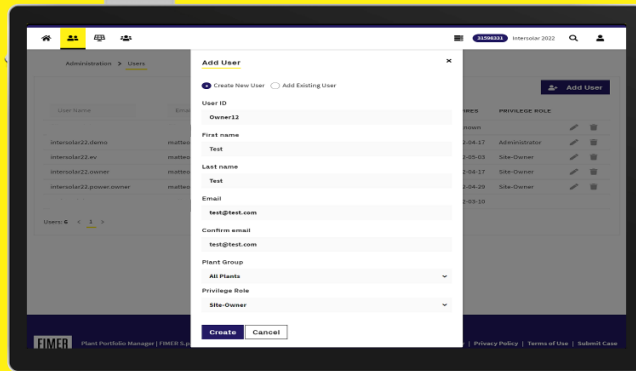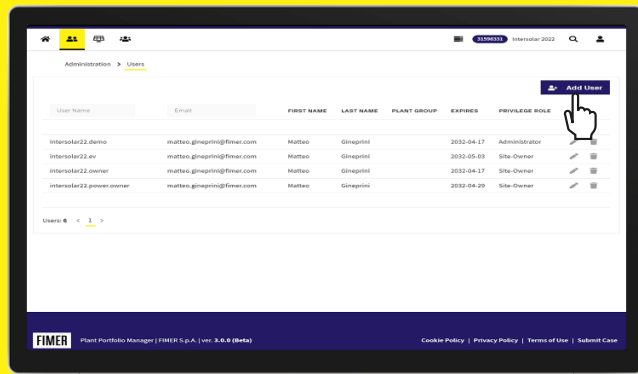
Contact Your Administrator

Contact your administrator and ask to create an account with privilege role Site Owner and register a plant on your behalf. The administrator can add a new user through the Users page inside the Administration section and a new plant through the Plants page inside the Administration section.

Already have an Aurora Vision account?

If you already Signed-Up on Aurora Vision, and you have not performed any plant registration operations*, you can contact your administrator and ask him to add your existing user to the portfolio.

* The existing user can be added only if no plant registration operations have been performed
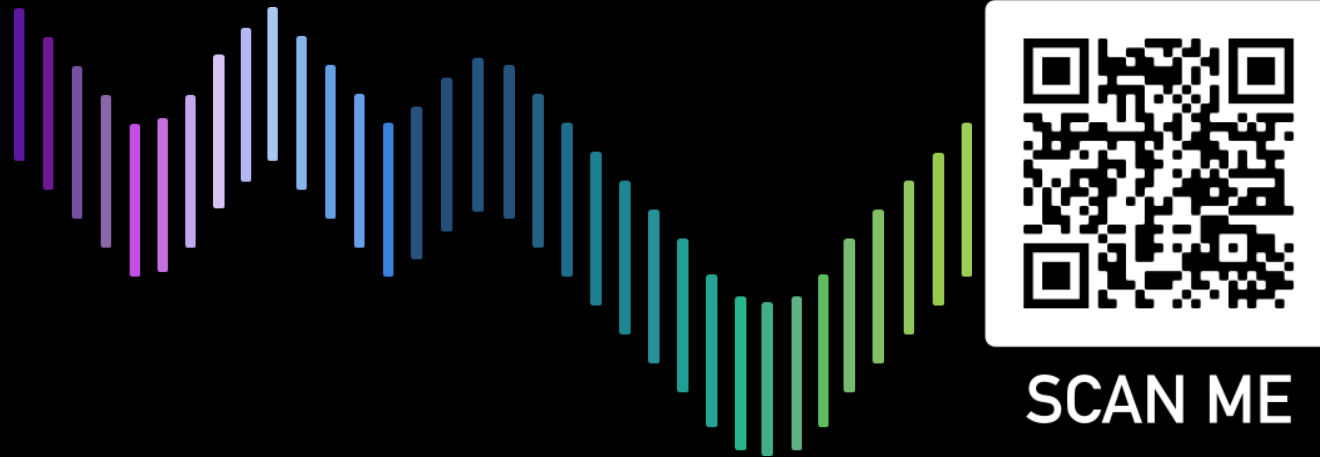
Documentation

The answers you are looking for, in one place

SCAN ME

FIMER

Thank you

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Italy

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Fax: +39 039 60 79 334

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fimer.com