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**Adapt & Play Holistic Cost Effective and user-friendly Innovations**  
with high replicability to upgrade smartness of existing buildings with legacy equipment

# **Self-Consumption Optimization Service**

User Guide



This project has received funding from the European Union's Horizon 2020 Framework Programme for Research and Innovation under grant agreement no 893079.



The Self-Consumption Optimization service of the Phoenix platform provides to its users useful recommendations on how to exploit better their EV chargers and/or battery in order to achieve lower consumption of energy from the grid when there is a photovoltaic present.

The available optimization use cases are:

- ❖ PV with EV chargers
- ❖ PV with battery
- ❖ PV with battery and EV chargers

There is an extra service provided to the users of the KAMA pilot, regarding **blackout support**. Given that the building manager is aware of a possible blackout at the next day, he/she can trigger the service during the previous day.



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**PV with EV charger**

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First optimization solution for demos with PV and EV charger (with possibility to charge an EV)



- OVERVIEW
  - At a Glance
- DATA SOURCES
  - Areas
  - Available Sensors
  - Sensors Data
- SERVICES
  - Energy Savings
  - Energy Consumption
  - Energy Generation & Self Consumption
  - Energy Savings
  - Energy Waste
  - Comfort
  - Convenience
  - Information
  - Health & Well-Being
  - Smart Readiness

### Self Consumption Report

Yesterday

Self Consumption Optimization Metrics

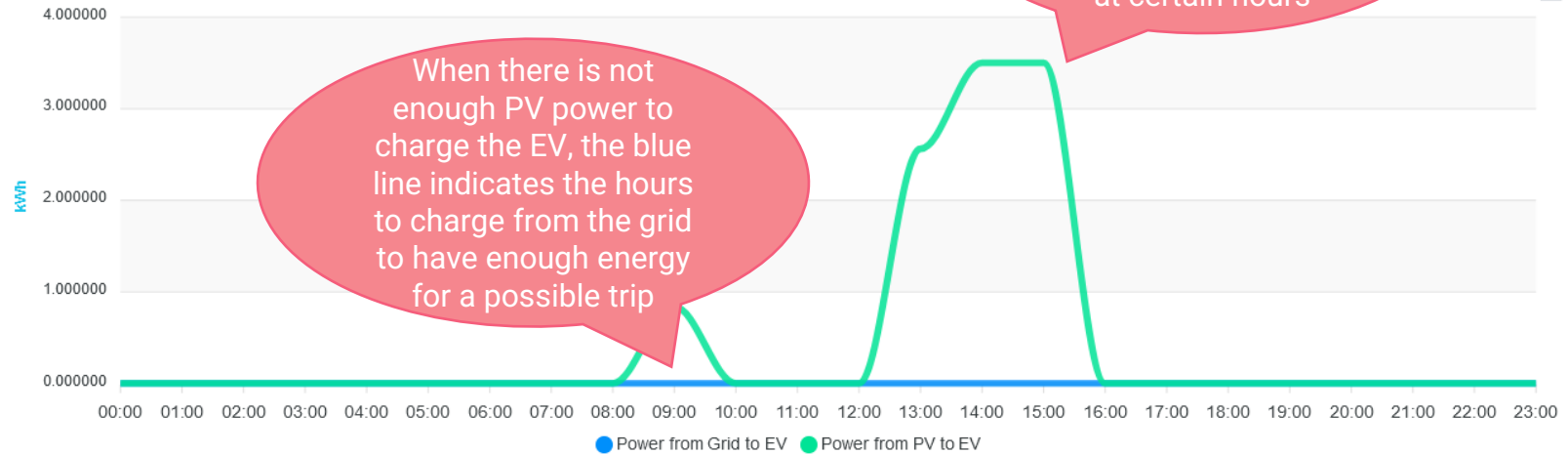
Total Generation  
**729.91 kWh**

Self-Consumption Rate  
**78.81 %**

Self-Consumption Factor of total demand  
**42.06 %**

PV Generation (Per Hour)

EV Consumption (Recommended Charging Schedule)





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### Self Consumption Report

Yesterday

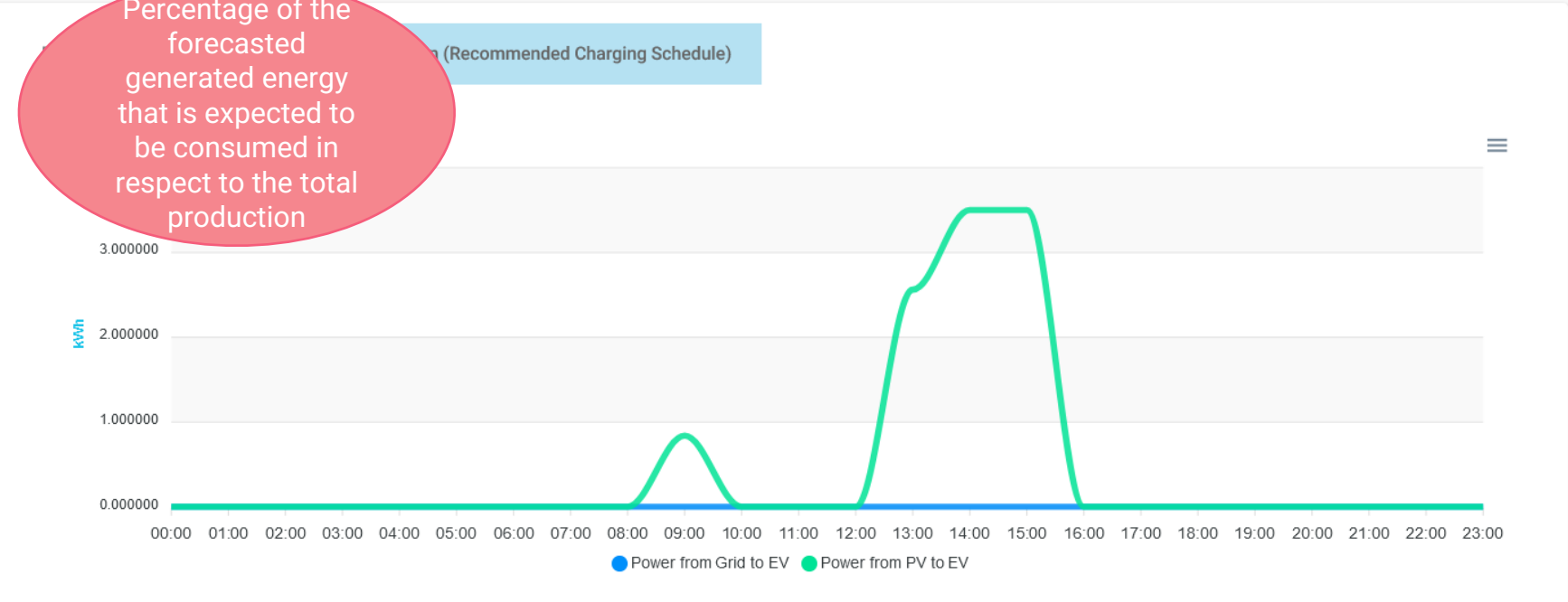
Self Consumption Optimization Metrics

Total Generation  
**729.91 kWh**

Self-Consumption Rate  
**78.81 %**

Self-Consumption Factor of total demand  
**42.06 %**

Percentage of the forecasted energy demand to be covered by the forecasted generated energy





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**PV with battery**

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Second optimization solution for demos with PV and battery storage installed



KAMA-Building

**OVERVIEW**

- At a Glance

**DATA SOURCES**

- Areas
- Available Sensors
- Sensors Data

**SERVICES**

- Energy Savings
  - Energy Consumption
  - Energy Generation & Self Consumption
  - Energy Savings
  - Energy Waste
- Comfort
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- Smart Readiness

### Energy Generation

#### Self Consumption Report

Yesterday

Self Consumption Optimization Metrics

Total Generation

**58.7 kWh**

Self-Consumption Rate

**100 %**

Self-Consumption Factor of total demand

**32.91 %**

Battery Status

HOLDING

**7 %**

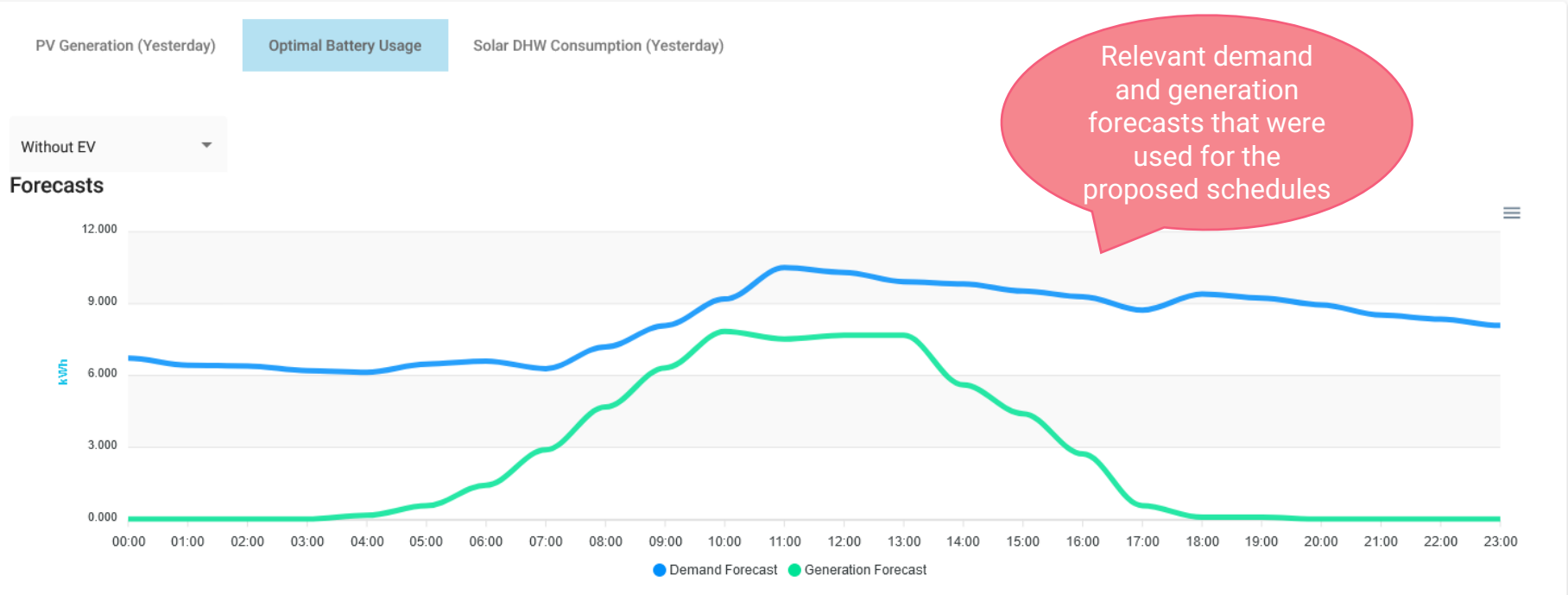
Percentage of the PV and battery power expected to be exploited in respect to total demand

Battery status can take different values such as: OFF, CHARGING, DISCHARGING

Battery Status

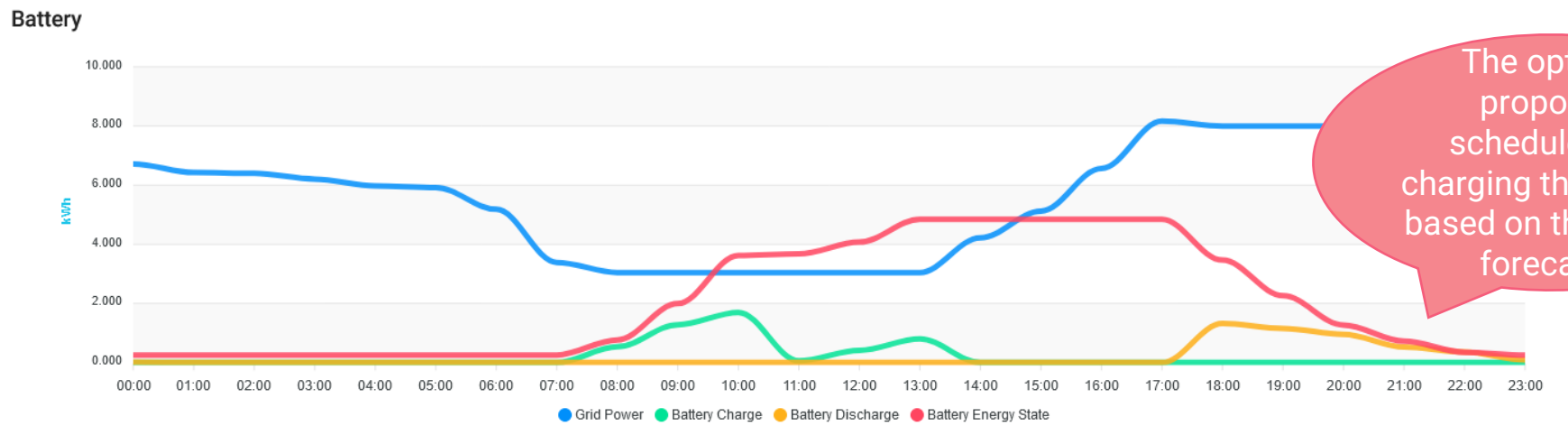
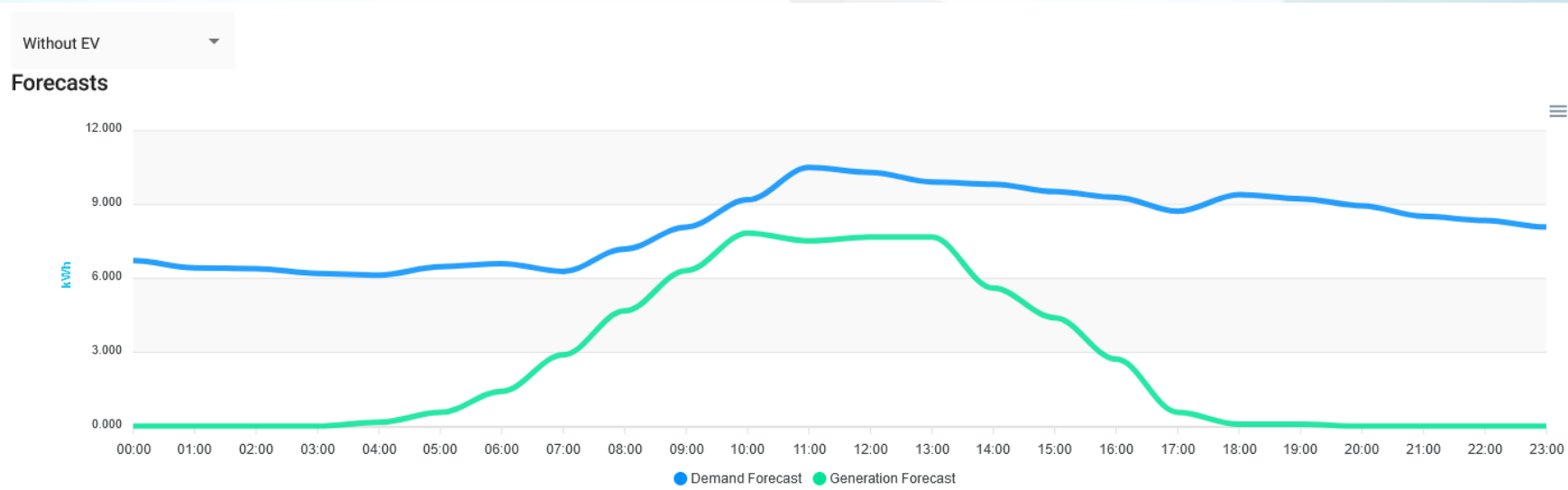
**CHARGING**

**7 %**





- Energy Consumption
- Energy Generation & Self Consumption
- Energy Savings
- Energy Waste
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The optimal proposed schedules for charging the battery based on the above forecasts





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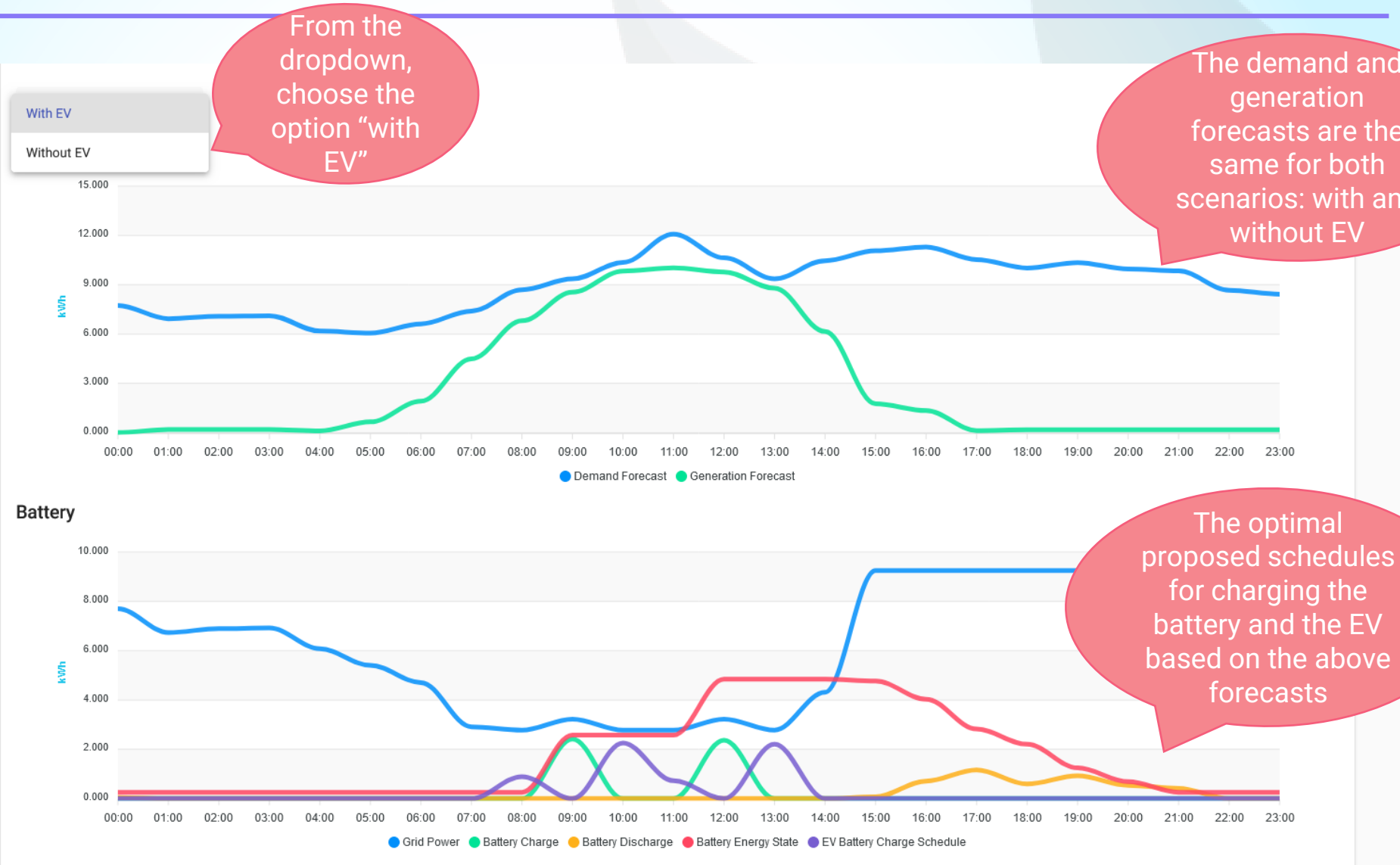
## **PV with battery and EV**

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Third optimization solution for demos with PV, battery storage and EV charger (with possibility to charge an EV)



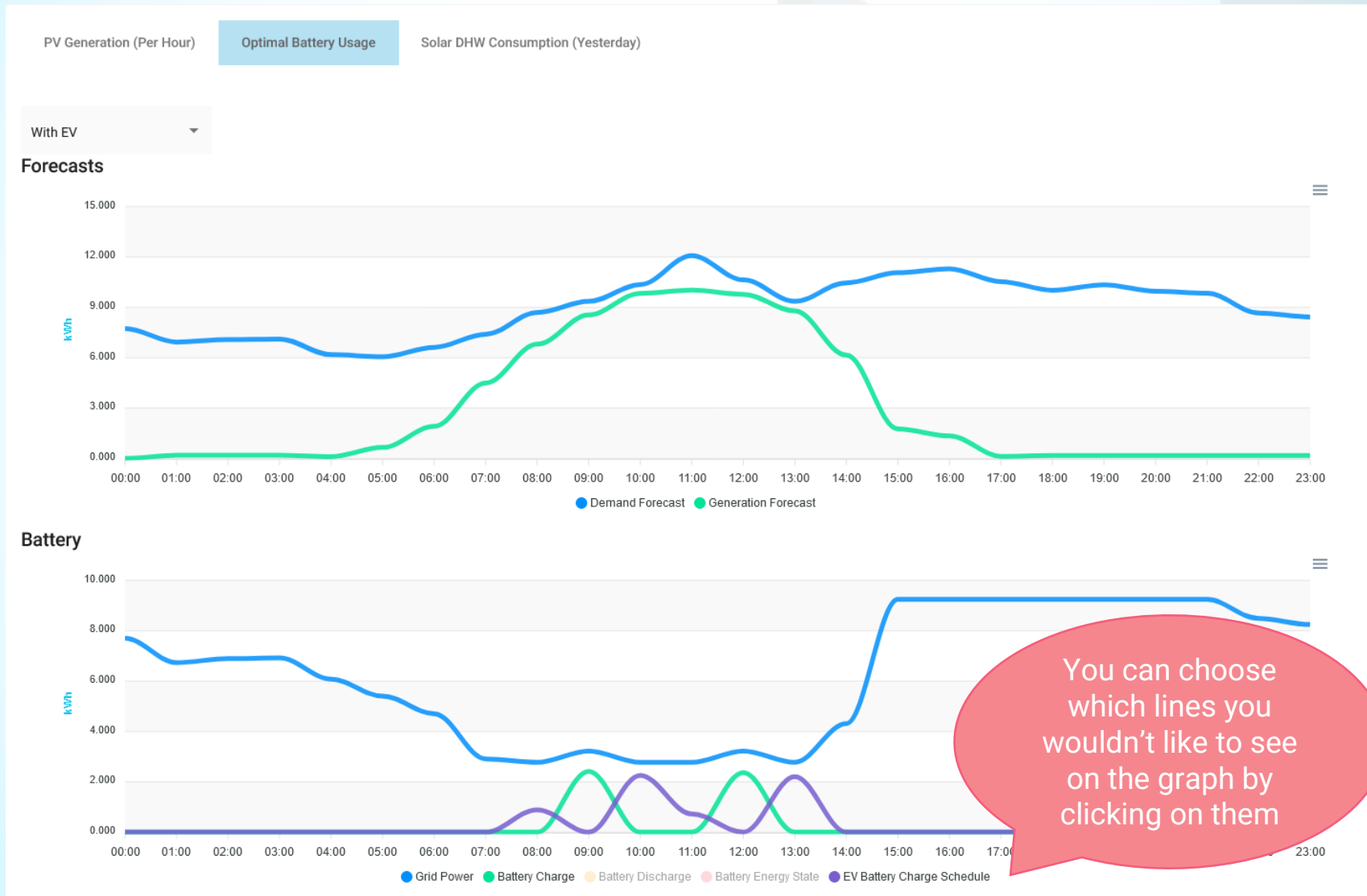
- Energy Consumption
- Energy Generation & Self Consumption
- Energy Savings
- Energy Waste
- Comfort
- Convenience
- Information
- Health & Well-Being
- Smart Readiness



From the dropdown, choose the option "with EV"

The demand and generation forecasts are the same for both scenarios: with and without EV

The optimal proposed schedules for charging the battery and the EV based on the above forecasts



You can choose which lines you wouldn't like to see on the graph by clicking on them



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## **Blackout Support Service**

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The blackout support service does not offer a dedicated visualization but a triggering option on the dashboard



KAMA-Building

**OVERVIEW**

- At a Glance

**DATA SOURCES**

- Areas
- Available Sensors
- Sensors Data

**SERVICES**

- Energy Savings
- Maintenance and fault prediction
- Demand Flexibility
- Convenience
- Information
- Smart Readiness

## At a Glance

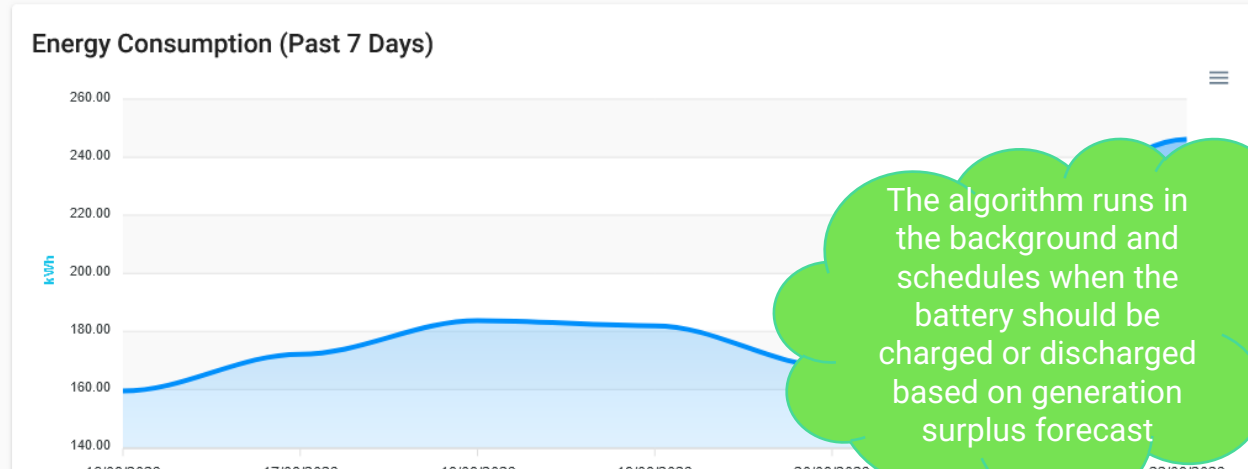
**Smart Readiness**

**SRI** 42%

**Energy Savings & Maintenance** 49%

**Comfort, Ease & Wellbeing** 45%

**Grid Flexibility** 32%



The algorithm runs in the background and schedules when the battery should be charged or discharged based on generation surplus forecast

**Building Identity**

Building Name	KAMA-Building
Location	Thessaloniki
No. of Areas	9

**EPC**

Zone

Select a...

**Blackout Service**

Enable this service if a blackout is imminent.

**Activate Service**

The manager can trigger the blackout support service, one day before it is expected to happen



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**Thank you**

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If you have any further question or you need assistance, contact:

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