

# Case Study Bright Sunday

## WebdynSunPM with Zero Injection



### About Bright Sunday

Bright Sunday transforms the way companies access energy, offering solar solutions with no upfront investment through Power Purchase Agreement (PPA) contracts.

From design to installation and full management of photovoltaic plants, Bright Sunday enables companies to reduce energy costs, generate clean energy, and advance their sustainability goals.

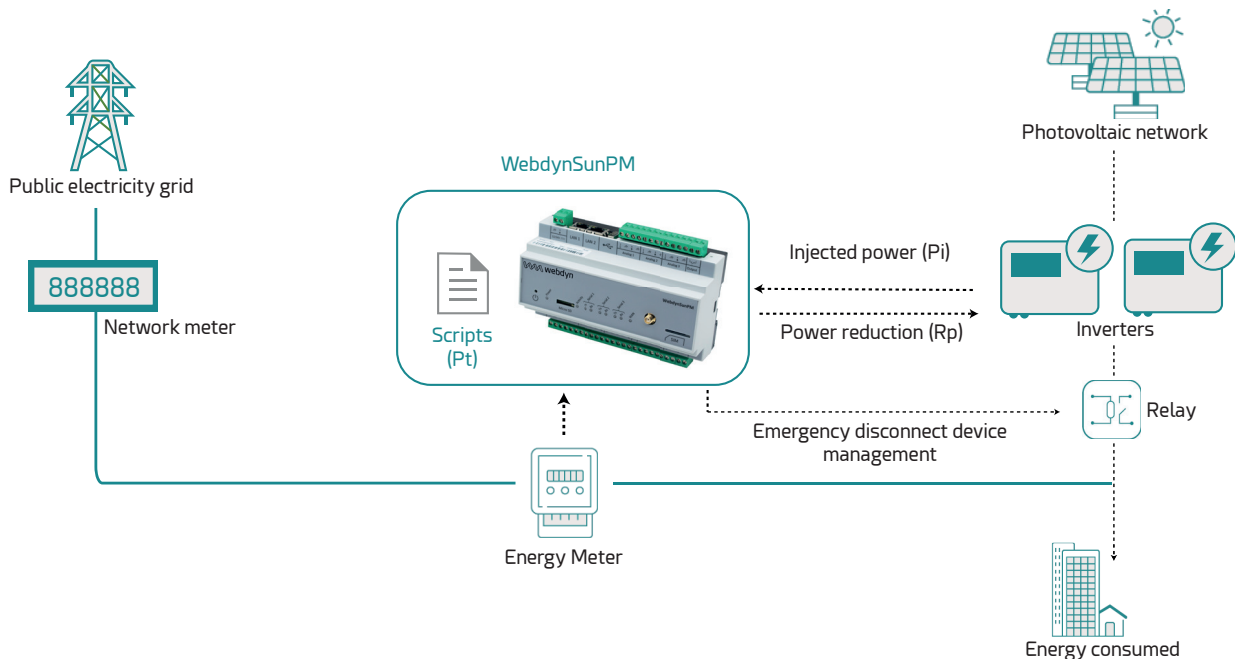


### Challenge

The main challenge for Bright Sunday in its projects in Spain is to optimize industrial self-consumption while strictly complying with Royal Decree 244/2019, which requires precise energy management under the zero-injection mode.

This involves ensuring that no energy is exported to the electrical grid, coordinating photovoltaic production with consumption in real time through advanced control systems, guaranteeing a certified technical solution that avoids regulatory risks, and at the same time maximizing profitability by optimally adjusting generation to the customer's demand.

### Architecture





## Client Testimonial



*“The WebdynSunPM allows us to manage our solar energy with full control and comply with regulations without complications.*

*The platform is reliable, efficient, and helps us maximize our self-consumption.”*

*Vasco Vieira, Asset Management Director*

## Project Context & Zero Injection Requirement

Bright Sunday requires a solution that enables efficient solar self-consumption while ensuring full regulatory compliance and stable system operation. A key requirement is real-time control of surplus energy to prevent any export to the grid.

In Spain, Royal Decree 244/2019 regulates self-consumption systems. Under certain grid constraints or connection conditions, installations must operate in zero-injection mode, meaning that no energy is allowed to be exported to the public grid.

To comply with this requirement, a certified anti-export control system is mandatory. This system must guarantee zero injection at all times using a fast closed-loop control architecture, typically with a response time of  $\leq 2$  ms, enabling immediate adjustment of inverter output based on production and consumption variations.

WebdynSunPM provides a certified and scalable control solution designed for these requirements, ensuring real-time export limitation ( $\leq 2$  ms response time) while optimizing the performance and operation of photovoltaic installations.

This approach ensures full compliance with RD 244/2019 and grid operator requirements, while maintaining high system efficiency and operational stability.

## Comprehensive System Monitoring

The solution needed to ensure full independence from any specific hardware or vendor ecosystem, allowing integration with a wide range of inverters, meters, and communication protocols. This flexibility enabled Bright Sunday to deploy a standardized management system across different installations, reducing complexity, avoiding vendor lock-in, and ensuring long-term scalability and maintainability.

## Platform Independence

Bright Sunday required an open, vendor-neutral solution capable of integrating with different brands of inverters and monitoring platforms. This flexibility was key to maintaining scalability, avoiding vendor lock-in and ensuring future adaptability in its projects.

## The Solution: WebdynSunPM

WebdynSunPM with a certified zero-injection script compliant with Royal Decree 244/2019 was the solution chosen by Bright Sunday due to its ability to combine monitoring, dynamic self-consumption control, and regulatory compliance in a single device.

Its architecture simplifies the infrastructure, improves operational efficiency, and enables reliable and scalable energy management.



# Technical Capabilities

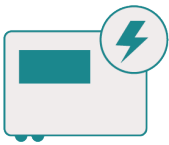
## Environmental Sensor Monitoring

Although in this installation the main focus is on inverter monitoring, energy sub-metering, and zero-injection control, WebdynSunPM also offers the capability to integrate environmental sensors, such as solar irradiance or temperature. This expands performance analysis capabilities and enables future operational optimizations.



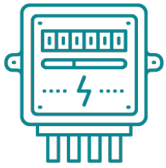
## Modbus Communication (Inverters)

WebdynSunPM enables integration via Modbus communication with multiple inverter brands, ensuring interoperability, simplifying the installation architecture, and facilitating centralized management of solar assets.



## Zero Injection Control

Thanks to the certified zero-injection script compliant with Royal Decree 244/2019, WebdynSunPM regulates inverter output in real time to prevent energy export to the grid, ensuring regulatory compliance, maximizing self-consumption, and improving operational efficiency.



## Submetering Integration

WebdynSunPM supports the integration of energy submetering systems, enabling precise measurement of consumption at different points of the installation. This allows detailed energy analysis, improved load management, and more accurate optimization of self-consumption strategies.



## Platform-Independent Operation

WebdynSunPM operates independently of proprietary platforms, facilitating integration with different supervisory systems while preserving the flexibility and scalability of the installation in the long term.

## Key benefits



## Cost Reduction

The optimization of self-consumption and dynamic control of surplus energy help reduce energy costs, improve operational efficiency, and maximize the return on investment of the installation.

## Simplified Management

Centralizing control and monitoring in a single device simplifies daily operation, facilitates fault detection, and reduces the technical complexity of the installation.

## Maximum Profitability

The combination of regulatory compliance, interoperability, and energy efficiency enables Bright Sunday to maximize the long-term value and profitability of its solar projects.

 [www.webdyn.com](http://www.webdyn.com)

 24-26 Rue des Gaudines 78100 Saint Germain en Laye

 +33 1 39 04 29 40