greenyellow
SHIFT TO PROFITABLE ENERGY!

GUIDE

Optimize your solar self-consumption: battery storage, for greater energy independence

Why BESS* solutions are a must for your energy strategy?

May 2025

*Battery Energy Storage Systems

www.greenyellow.com

Introduction

The energy transition has become a strategic challenge for corporates and local authorities, who need to **balance cost control, competitiveness, and decarbonization requirements.**
Facing:

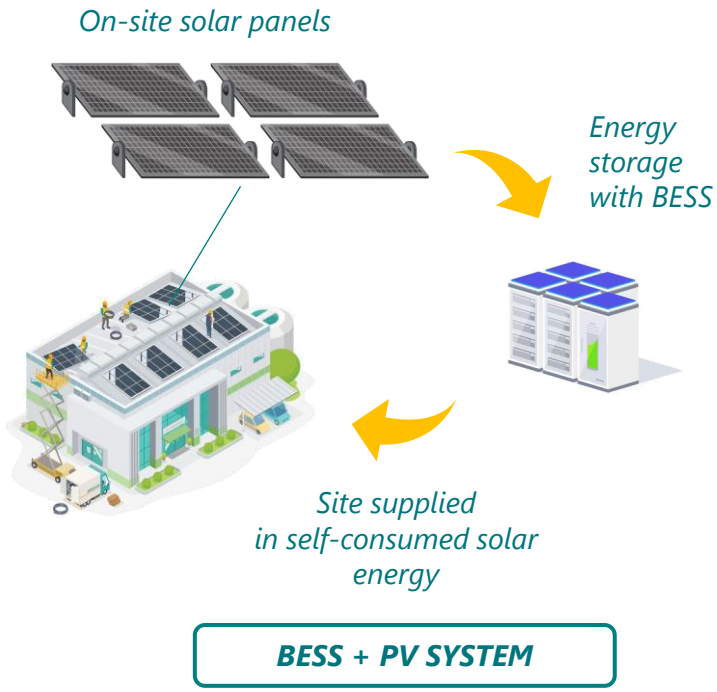
1. **Rising** electricity **costs**
2. Price **volatility**
3. **Consumption peaks** leading to penalties
4. And a growing **dependence** on the power grid due to the increasing electrification of uses

... energy optimization becomes a top priority.

At the same time, the need to **reduce carbon footprint** and comply with **regulatory requirements** are driving the growing integration of renewable energies. However, their **intermittent** nature makes it essential to implement solutions that ensure **flexibility** and **energy security**.

In this context, **Battery Energy Storage Systems (BESS)** are emerging as a key lever.

Complementing solar generation, they help **smooth out consumption**, **secure energy supply**, limit the extra costs generated by **demand peaks,** and reinforce the **energy resilience** of sites.



This guide explores current energy issues related to solar PV, the benefits of BESS and concrete solutions for optimized energy management.

#1 Corporate energy challenges: Why BESS is the solution

Energy storage > An essential solution?

BESS systems are seeing several advancements::

- ✓ **A mature, competitive technology**: The declining cost of batteries makes their adoption economically viable, with long-term performance guarantees.
- ✓ **Regulatory incentives**: Numerous schemes support the integration of BESS, making investment more attractive *(in line with national regulations).*
- ✓ **Greater flexibility**: Storage optimizes self-consumption, avoids peaks and improves energy resilience.

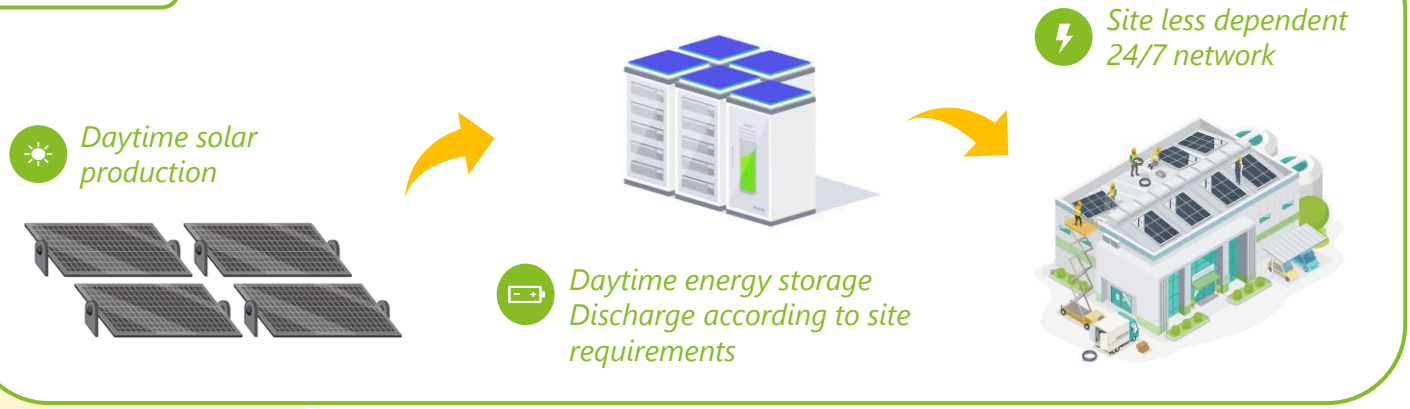
BESS: a driver for controlled, economical energy

Integrating a BESS system enables smarter and more cost-effective energy management:

Cost optimization by shifting consumption period: By charging batteries during off-peak hours - when electricity is cheaper - and then discharging them during peak hours, corporates can significantly reduce their energy bills (energy arbitrage).

Controlling consumption peaks: BESS smoothes out the load curve, thus avoiding overruns of the subscribed power and the associated penalties.

OPERATION BESS + PV



#2 The strategic role of BESS in a solar system

Improved energy autonomy and PV integration

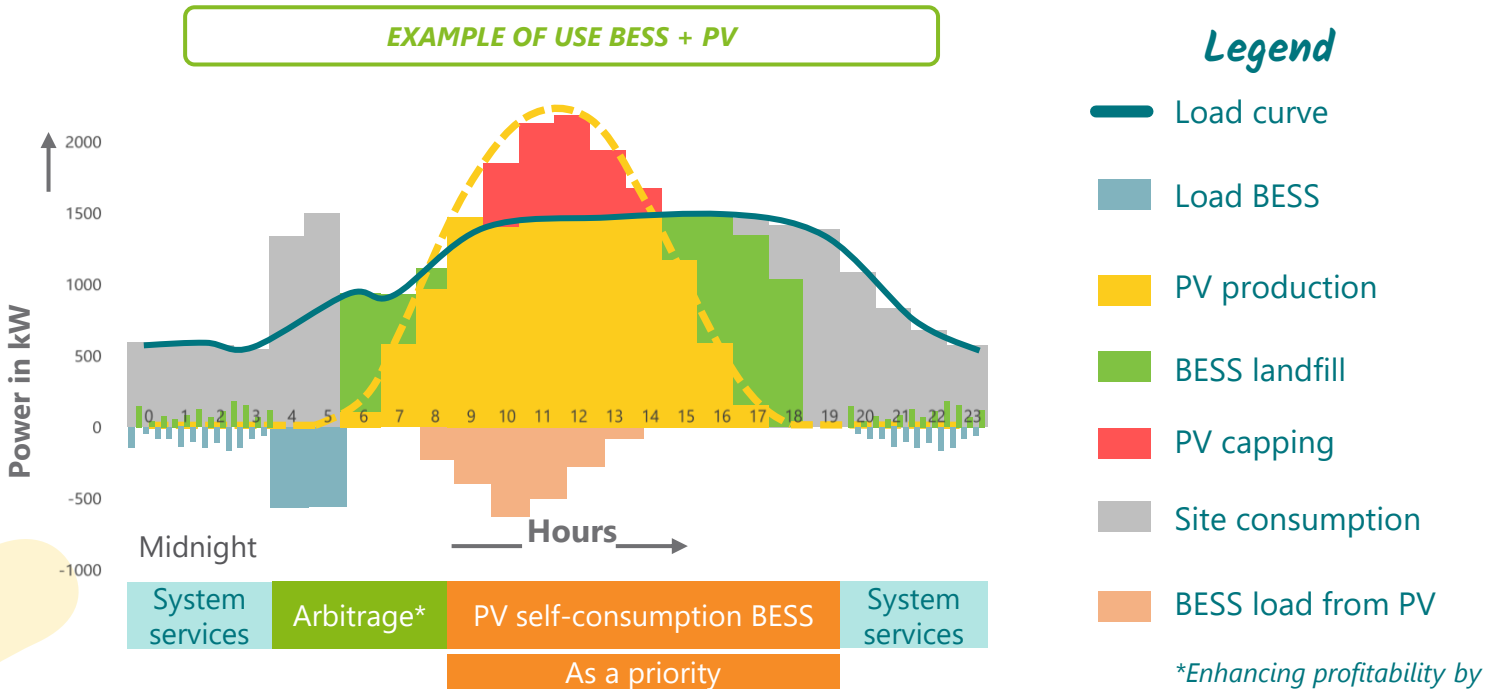
Solar self-consumption: BESS enable the storage of solar energy for later use, reducing dependence on the grid and optimizing the use of the energy produced.

Energy security: In the event of a power cut or drop in production, a BESS can provide a back-up supply, guaranteeing continuity of operations.

Value generation and new business models

Participation in regulation markets: In some cases, BESS enable stored energy to be resold to the electricity market during peak hours providing grid support *(subject to local regulations)*.

Infrastructure optimization: By integrating a BESS into solar power installations, companies maximize the use of existing infrastructure. By absorbing excess production locally and releasing it at the right time, BESS limit the need for grid reinforcement and avoid overloading, speeding up project deployment while reducing their economic and environmental footprint.



**Enhancing profitability by timing BESS charging and discharging to exploit variations in electricity market prices*

Case studies: How BESS transforms corporates

#1 LEISURE PARKS

Compagnie des Alpes (CDA), a European leader in leisure activities, is carrying out an ambitious project combining **solar energy production**, 440 **charging points** for electric vehicles, and **2 MWh** of **energy storage solutions (BESS)** at its **Futuroscope**, **Walibi Rhône Alpes** and **Parc Astérix** sites. These infrastructures cover almost **25%** of the self-consumed **electricity needs** of these three parks. The storage solution **overcomes the limits of intermittent solar power**, while **optimizing self-consumption** through smart battery management.

#2 MANUFACTURE

An automotive supplier has implemented an innovative energy project at its regional site in Thailand.
The system combines **600 kWp of rooftop solar panels with a 400 kWh energy storage system (BESS)**, comprising two 200 kWh batteries. This system stores excess solar production during the day, particularly at peak times, and releases it in the evening when consumption is higher.
Thanks to this turnkey solution, the annual production reaches 960 MWh, contributing to reducing the site's carbon footprint while improving its energy autonomy and controlling costs.

Case studies: How BESS transforms companies

#3 RETAIL IN VIETNAM

CENTRAL RETAIL

Central Retail Vietnam has taken a step towards **more efficient and sustainable energy use** in retail by installing advanced energy storage systems at its GO! Thang Long site, These systems have significantly **optimized their consumption**, **reduced costs** associated with demand peaks and **enhanced the reliability** of their power supply.

The solution deployed has an **installed capacity of 1 MW** and a **useful capacity of 2.3 MWh,** under a **20-year contract.**

#4 INDUSTRY IN SPAIN

STELLANTIS

Stellantis adopts an **integrated energy strategy** for its industrial site in Spain by implementing a project combining solar production, energy efficiency and energy storage. The result: an almost 60% reduction in energy consumption, **100% solar self-consumption,** and the installation of a **25 MWh BESS system**, making this battery storage system **one of the largest self-consumption systems in Europe.**

This initiative is fully in line with the Group's CSR commitments and its trajectory towards the goal of "zero CO_2 emissions".

#4 Accelerate your Energy transition without investment

Principle and advantages of third-party investment for your transition program

Third-party investment is a model in which an **external investor** finances **the purchase, installation, and operation** of the equipment or systems required for a battery energy storage project.

The main players involved in this process are :

- **The corporate** acting as the client.
- The **third-party investor**, often an ESCO (Energy service company) such as GreenYellow, which provides full financing and management of the project. The company pays back the installations according to the solar energy produced, over the duration of the contract. Thanks to BaaS (Battery as a Service) or PPA (Power Purchase Agreement), the third-party investor guarantees energy performance over the duration of the contract.

The third-party investment model offers many advantages for the company.

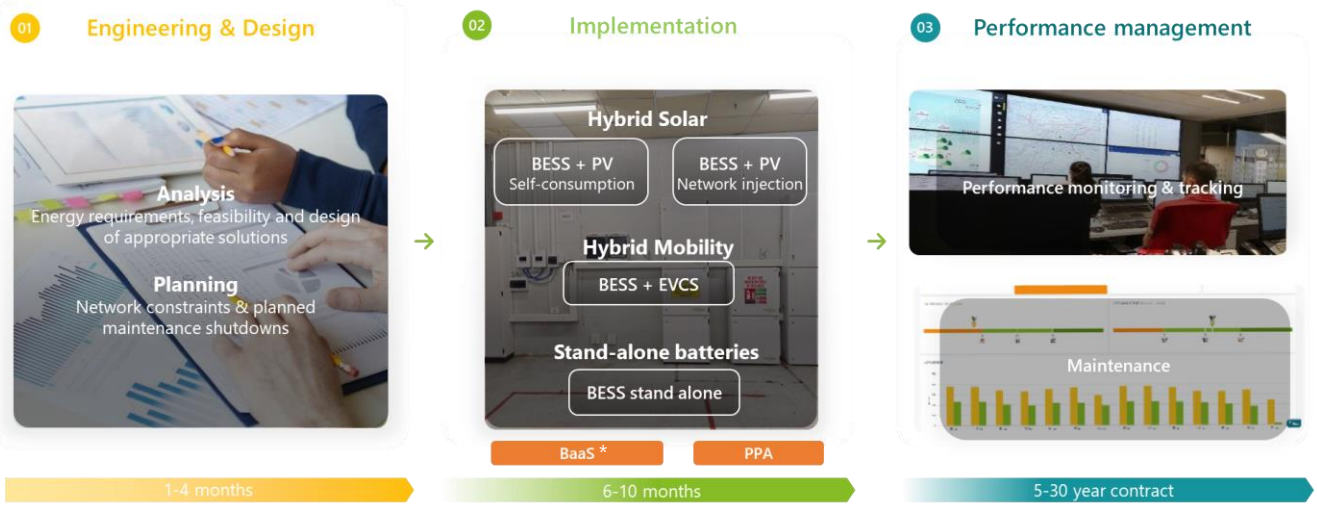
- It enables the project to be carried out **WITHOUT ANY INITIAL INVESTMENT**, as the financing is fully provided by the energy services company.
- It provides an **IMMEDIATE REDUCTION IN ENERGY COSTS**, by allowing optimized access to clean, local and competitive solar energy.
- The corporate also benefits from a **TRASNFER OF RISKS**, since the third-party investor assumes responsibility for the performance and maintenance of the installations.
- **The FLEXIBILITY OF CONTRACTS** allows them to be tailored to the specific needs of the company.
- This model helps to **REDUCE THE CARBON FOOTPRINT** of the corporate, thus contributing to sustainable development objectives and facilitating compliance with environmental regulations.

In short, third-party investment is an ideal solution for corporates and industrial players wishing to **adopt renewable energy without incurring heavy costs and initial financial expenses**.

#4 Accelerate your Energy transition without investment

Trust an expert to optimize your solar energy management with a BESS

Our multi-expertise specialists guide you every step of the way to guarantee the performance of your energy storage system (BESS), based on field experience and intelligent management.



**Battery as a Service*

1. Personalized energy diagnosis

Detailed analysis of your energy consumption, modeling of your energy profile, and optimal system sizing.

2. Turnkey installation & integration

Rapid on-site deployment, integration with existing infrastructures (PV, EVCS), regulatory compliance assured.

3. Supervision & intelligent control

Real-time optimization of charge/discharge cycles, performance monitoring, alerts and automated reporting.

4. Proactive maintenance

Continuous monitoring, preventive interventions and high availability guarantees for long-lasting performance.

A tailor-made solution, financed and optimized for your energy objectives.

GreenYellow combines technology, expertise and a flexible business model to maximize your profits... and your energy independence.

#4 Accelerate your Energy transition without investment

Top 5 mistakes to avoid

1. Underestimating the synergy between photovoltaics and battery storage

- ✗ Installing solar without storage can limit self-consumption and site resilience.
- ✓ GreenYellow designs integrated systems where PV powers batteries to maximize energy independence.

2. Under- or oversizing the BESS

- ✗ Incorrect sizing reduces the economic and energy impact of the project.
- ✓ GreenYellow conducts a technical audit based on your consumption profiles for precise sizing.

3. Neglecting energy supervision

- ✗ Unintelligent control leads to efficiency losses.
- ✓ GreenYellow offers real-time monitoring, with optimized charge/discharge algorithms.

4. ignoring financing levers and hybrid models

- ✗ The initial cost can delay decision-making, while solutions exist.
- ✓ GreenYellow deploys fully financed projects: BaaS, PPA with included battery storage, which are third-party investment contract models – 0€ Capex.

5. Leaving aside end-of-life and regulatory obligations

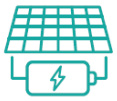
- ✗ Poor end-of-life management can increase the carbon footprint and affect compliance.
- ✓ GreenYellow ensures responsible life-cycle management, with solar panels recycled (by SOREN in France) and recyclable batteries.

With GreenYellow, your self-consumption solar + BESS projects are designed to last, perform and adapt to your needs.

#5 Other concrete applications of BESS

Battery Energy Storage Systems (BESS) can be deployed alone or in conjunction with other energy infrastructures to meet a variety of objectives.
Three main configurations can be distinguished:

Stand-alone BESS, used independently to optimize energy consumption, ensure service continuity or provide grid services.



BESS combined with grid injection photovoltaics (PV + BESS): Storing solar energy produced during the day to reinject into the grid optimal time (energy arbitrage).

BESS combined with electric vehicle charging stations (EVCS + BESS): Speeding up station commissioning, while improving flexibility and reducing infrastructure costs and grid power demands.

Each configuration offers specific advantages, depending on the client's energy, economic and technical needs.

Maximizing energy independence for businesses and optimizing costs with intelligent energy storage

	BESS (STAND-ALONE)	PV + BESS	EVCS + BESS
Store excess solar energy produced during the day for use during peak consumption periods *(= reduced need to purchase electricity from the grid)*		●	
Optimize **connection/deployment times** of PV installations / EVCS stations		●	●
Reduce **the client's power calls** on the network (**peak shaving**), particularly during periods of high demand	●	●	●
Load shifting client **consumption** in relation to the grid, to optimize costs by storing energy when prices are low	●	●	●
Guarantee **continuity of service**, by providing back-up power in the event of network outages or instability	●	●	●
Providing system services **to support electrical distribution and transmission networks**	●	●	●

#5 Take action!

They trusted GreenYellow for their energy transition project

GreenYellow's extensive expertise allows us to move quickly with the concrete implementation of these installations, accelerating our electricity production and self-consumption strategy. Additionally, these projects include the deployment of charging stations for electric vehicles for our leisure park visitors—a step toward reducing Scope 3 emissions.

Dominique THILLAUD,
CEO of **Compagnie des Alpes**

This partnership with GreenYellow is fully in line with our ESG strategy, which aims to promote positive hospitality: offering our clients concrete solutions for more environmentally-friendly mobility is one of them. Thanks to GreenYellow's expertise, we have deployed a high-performance recharging network, accessible not only to our clients, but also to local residents and visitors, while integrating storage at several stations. This collaboration illustrates our ambition to make the hotel a key player in the ecological transition.

Franck BERMOND,
Construction and ESG
Director, **AccorInvest** Group

THE GREENYELLOW BENEFITS

#1 ***Recognized*** *expertise* ***since 2007***

#2 *A unique, flexible platform of* ***decarbonization offers*** *for our clients' Energy transition needs*

#3 *Solutions* ***100% financed*** *by GreenYellow*

#4 *Equipment* ***lifecycle*** *management*

#5 ***Sustainable decarbonization of the site:*** *increased use of solar energy and reduced peak load on the grid*

#6 ***Reduced environmental impact:*** *90% of battery components can be recycled at end-of-life, with a service life of up to 20 years*

#7 ***Reduced energy costs:*** *intelligent optimization of the charge/discharge cycle, tailored to the specific needs of the client and his energy contract*

#8 ***Guaranteed performance:*** *commitment to system performance and reliability*

Let's build your fully financed energy storage project together.

Contact us!

ABOUT GREENYELLOW

GreenYellow, a French company founded in 2007, has become in 18 years a major player in the Energy transition in France and abroad, and a true ally of companies and local authorities.

As an expert in decentralized solar photovoltaic production, energy efficiency projects, energy storage and electric mobility solutions, GreenYellow supports its clients across the entire value chain. The group develops, finances and operates infrastructure projects enabling them to produce green, local and competitive energy, reduce their energy consumption and thus accelerate their decarbonization.

All the projects carried out by GreenYellow in 2024 enabled our clients to avoid the emission of 546,000 tonnes of CO equivalent$_2$. The Group is also aiming to achieve "Net Zero" carbon neutrality for scopes 1 and 2 by 2040.

Operating in some 15 countries on 4 continents, GreenYellow is constantly innovating to meet the challenges of climate change and enrich its unique, global offering platform.

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