

# C&I CASES

## PEAK SHAVING ENERGY STORAGE FOR FOOD PROCESSING FACTORY



### Battery Capacity

- ESS-GRID C241: 241 kWh C&I ESS Battery

### Inverter Type

- 125kW AC/DC (PCS)

### Installation location

- Netherlands

### ESS Type

- Air-cooled Outdoor Cabinet Energy Storage System

### Solar Panels

- Pure grid-connected Mode, without Photovoltaic Panels

### Installation Date

- June 15, 2025

### System Highlight

- Peak Shaving
- Energy Consumption Optimisation
- Reduce Electricity Costs
- Peak Optimization
- Peak Power Supply



## PROJECT BACKGROUND

Cutting energy costs — and carbon emissions — in food production

In the Netherlands, where energy prices continue to rise and sustainability standards grow ever stricter, one local food processing company decided to take control of its energy future.

To address this, the company invested in a pure grid-tied energy storage system from BSLBATT, designed to store excess energy and reduce peak demand charges. By intelligently balancing consumption and generation, the system helps the factory cut operating costs, strengthen energy security, and contribute to a lower-carbon future for the Dutch food industry.

The facility — home to large-scale cold storage units, processing lines, and temperature-critical equipment — requires round-the-clock power reliability. But with soaring grid costs and fluctuating energy demand, relying solely on the national grid was no longer sustainable.

With this installation, the company not only ensures efficiency in every stage of production — but also demonstrates that profitability and sustainability can go hand in hand.

# CHALLENGES BEFORE INSTALLING ENERGY STORAGE SYSTEMS

## High and Unpredictable Energy Costs

01

Before installing storage, the company was fully exposed to volatile electricity prices — especially during peak hours. Their cold storage and processing lines run continuously, so energy costs could fluctuate dramatically, making budgeting difficult.

## Demand Peaks and Grid Constraints

02

The factory's heavy machinery and refrigeration units create large power demand spikes. These peaks not only increase operational costs through demand charges but can also strain the local grid, sometimes triggering penalties or forced curtailments.

## Limited Grid Capacity and Reliability

03

In local industrial areas of the Netherlands, grid upgrades are slow and costly. The customer likely struggled with capacity limits — meaning they couldn't expand production or add new equipment without risking grid overload or power interruptions.



# RESULTS AND ACHIEVEMENTS

The food processing plant's installation of the BSLBATT commercial energy storage system marks a significant step forward in the plant's pursuit of operational efficiency and sustainable development.

- **Energy Cost Reduction:**

By integrating a high-performance lithium storage system, the food processing plant has significantly lowered its electricity expenses. The system optimizes energy use during peak and off-peak hours, allowing the facility to reduce demand charges and achieve measurable cost savings month after month.

- **Stable and Uninterrupted Operations:**

With critical equipment such as cold storage, processing lines, and refrigeration units now supported by reliable battery power, the plant maintains continuous operation even during grid fluctuations — ensuring product quality and minimizing production downtime.

- **Smart Energy Management:**

The system intelligently balances power between the grid, on-site consumption, and renewable inputs, helping the factory better manage its overall energy profile while reducing stress on the national grid.

- **Sustainability Leadership:**

Through this installation, the company takes a decisive step toward its carbon reduction goals. By embracing energy storage, it not only cuts operational emissions but also contributes to the Netherlands' broader renewable energy transition.



# REGARDING THE ROI OF THIS PEAK SHAVING ENERGY STORAGE SYSTEM

## Key Financial Assumptions:

- 1 Daily Cycle
- Peak Tariff:

The Valley price is around €0.04 – €0.05/kWh at the lowest. The peak price is around €0.11 – €0.12/kWh at the highest. Therefore, the peak – off – peak price difference is usually €0.06 – €0.08/kWh.

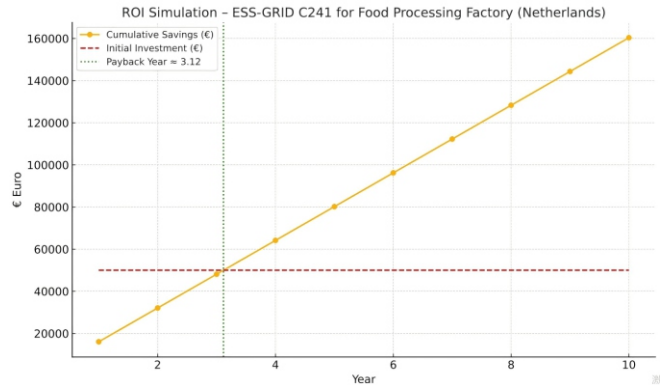
- Arbitrage Margin: €0.08/kWh

## Revenue Calculation:

- Daily Arbitrage Saving =  $241 \times €0.08 = €19.28$
- Annual Arbitrage Saving  $\approx €7,037.2$  ( $365 \times €19.28$ )

## Additional Benefits:

- Demand Response Income  $\approx €5,000/\text{year}$
- Outage Cost Avoided =  $€1,000 \times 4 \text{ outages} = €4,000/\text{year}$



## Wholesale electricity prices in Europe

€/MWh

Monthly Daily (1 year) Daily (3 months)

Netherlands



Source: ICGC (UK, Ireland, Ireland), ENTSO-e (all other EU countries). Prices are average day-ahead spot prices per MWh sold per time period. Max and min prices refer to the highest and lowest average values of any country in the EU in that period. Prices converted from €/MWh to €/MWh for the UK. Download data [here](#).

EMBER

**Total Annual Benefit = €16,037.2   System Cost = €50,000   ROI: Payback Period  $\approx$  3.12 years**

System Model	ESS-GRID C241
Battery Capacity	241 kWh
Arbitrage Margin	€0.08/kWh
Annual Arbitrage Saving	€ 7,037.20
Demand Response Income	€5,000/year
Outage Avoided Value	€4,000/year (4 outages x €1,000)
Total Annual Benefit	€16,037.20
System Cost	€50,000
ROI: Payback Period	x 3.12 years

BSLBATT is a leading manufacturer and brand of energy storage batteries. We provide customers with tailor-made battery energy storage solutions. Contact us to discuss your industrial or commercial system solution, or browse our products.