

# A MASTER OF HIS TRADE

Battery storage supports bakery

TESVOLT  
THE ENERGY STORAGE EXPERTS



## PROFILE

**Client:**  
Bäckerei Mertens

**Industry:**  
Trade/retail

**Special characteristics:**  
Plan for operating an electric vehicle charging station

**Region, country:**  
Paderborn, Germany

## THE BACKGROUND

Confectioner and master baker Markus Mertens is known in Paderborn for his delicious cakes. He now has a staff of 80 and runs four of his own sales outlets in addition to his bakery. He also supplies a number of cafés and bakeries in the city, as well as hotels, hospitals and nurseries.

## THE CHALLENGE

In 2019, Markus Mertens had a 53.76 kWp photovoltaic installation set up on the roof of his production facility. It meets almost a quarter of the total electricity consumption requirements, which amount to just over 200,000 kWh. Like all bakers, Mr Mertens starts work extremely early. He and his production team get up at 2:00 am. But because the photovoltaic installation isn't yet supplying electricity yet at that time of the morning, Mr Mertens has to rely on a storage system for operations if he wants to use his own electricity from the roof for baking.

A powerful battery storage system can do more than just absorb the electricity from the photovoltaic installation and distribute it throughout the day; it can also save money elsewhere by 'intercepting' peak loads. Mr Mertens experiences peak loads when multiple large-scale appliances such as ovens or cold stores require electricity at the same time. The bakery's consumption skyrockets in summer when multiple cooling units start up simultaneously in

warm weather. If a storage system were to provide the power instead of drawing it from the grid, Mr Mertens could benefit from significantly lower grid charges and thus greatly reduce his electricity procurement costs.

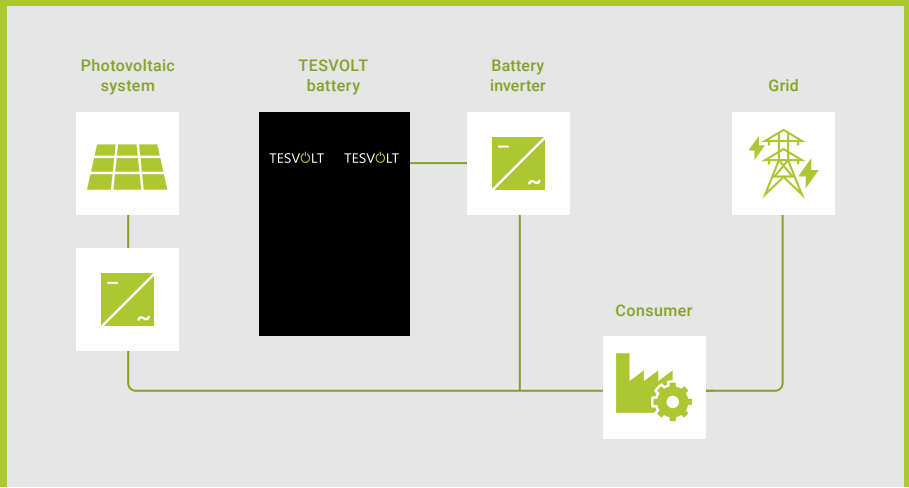
### Requirements for a storage solution:

- A powerful storage system with a high depth of discharge and many guaranteed cycles for a sustainable and long-lasting investment
- Easy installation and high operational reliability in a harsh environment



## THE SOLUTION

Romberg Projekttechnik, a company specialising in electronics that focuses on individual large-scale projects, came up with a viable overall system for Mr Mertens. After covering all areas of the roof with solar modules, the company installed a lithium-iron manganese-cobalt battery storage system directly behind the sales area at the production facility. Now the TS HV 70 from German company TESVOLT delivers an output of 60 kW – enough power to bake the biggest rolls.



*"I'm thrilled to bits with the device. I'm saving cold, hard cash and I'm perfectly equipped for future steps, such as expanding my electric vehicle fleet."*

Markus Mertens, master baker and confectioner

*"The performance of the TESVOLT storage system is astonishing, time after time. Since we've had TESVOLT in our portfolio, I don't install anything else."*

Mirco Stork, TESVOLT expert partner at Romberg Projekttechnik

## THE ADVANTAGES

- Peak shaving**  
 from 50 kW to 25 kW, so the bakery can halve its electricity costs
- Safe and long-lasting**  
 The system boasts an above-average lifetime of up to 30 years thanks to extremely robust Samsung battery cells and the one-of-a-kind battery management system, which optimises cells not only within a single module, but also between the modules in each cabinet.
- Expandable**  
 TESVOLT systems can be expanded or exchanged at any time – not just within the first few months of commissioning, but even many years later.
- Transparent**  
 seamless monitoring of storage system health down to cell level.
- Powerful and responsive**  
 Thanks to the battery management system, TESVOLT's storage systems make the energy they accumulate fully available. TESVOLT storage systems are 1 C-capable, meaning they can be fully charged or discharged within an hour with the proper configuration. So even high-performance consumers can be kept running when the sun isn't providing enough power.

## PROJECT: FACTS AND FIGURES

Storage system	TS HV 70
Energy content	140 kWh
Discharge power	60 kW
Cell	Lithium NMC prismatic (Samsung SDI)
Efficiency (battery)	up to 98 %
Cycles	6.000–8.000 (0,5C- to 1C at 23 °C +/-5 °C with 100 % depth of discharge)
Operating temperature	-10 °C to 50 °C
Battery inverter	SMA Sunny Tripower Storage 60
Installer	Romberg Projekttechnik GmbH & Co. KG

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