

KEEPING MILK AND ELECTRICITY FLOWING

Profile

Client:

Matthias Kampert, dairy farmer

Industry:

Agriculture

Region, country:

Lüdinghausen, Germany

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Photo: B&W Energy

The background

Matthias Kampert's farm has been in the family for over 100 years. There have been generations of dairy farmers on the same land. When Kampert's father took over the farm, which is located 30 km north of Dortmund, it had 10 cows. There are now more than 130 animals in total, including 50 young. Kampert runs the farm together with other family members and without any external employees.

The challenge

To cut electricity costs on the farm, Matthias Kampert made use of its extensive roof space to install a photovoltaic system. This delivers a maximum power of 41 kWp. The problem is that, as in any typical dairy farm without milking robots, the busiest times of day are times when the sun isn't up.

To obtain as much milk as possible from his animals, Kampert milks them twice a day, around 12 hours apart. This gives the animals time to rest and produce new milk. They are milked in a milking parlour with 10 places, once before sunrise and once in the evening. The vacuum pumps of the milkers need 4.5 kW, while the time-delayed cooling system needs 6 kW. The peak loads caused on Kampert's farm by these machines come

at times when the sun isn't high in the sky and the PV system isn't working at full capacity.

The solution is simple. With a powerful battery storage system, Kampert can take the electricity he has generated and distribute it over the day so that he can use as much as possible himself on the farm.

The requirements for a storage solution:

- A powerful storage system with a high depth of discharge and high number of guaranteed cycles to ensure a sustainable and secure investment
- Easy installation and safe operation in a rugged environment

The solution

For advice on energy issues, Kampert relies on B&W Energy. The company recommended TESVOLT products to complement his PV system. TESVOLT's lithium-ion battery banks offer outstanding performance and are also extremely robust thanks to the unique battery management system, which makes them ideal for industrial applications. B&W Energy installed the TS 48 V with an energy content of 38.4 kWh and a long-term discharging power of 18 kW (24 kW for 30 minutes).

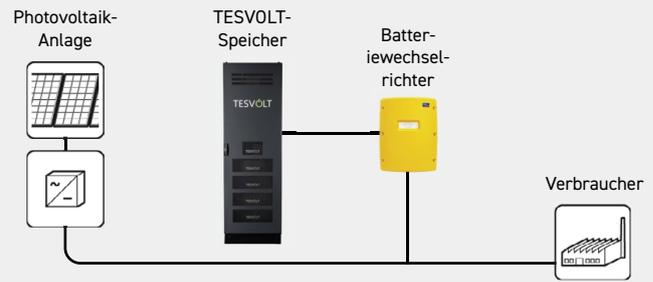


Photo: B&W Energy

The advantages

- **Reliable and durable:** The system boasts an above-average service life of up to 30 years. This is thanks to highly robust Samsung battery cells and the unique battery management system, which optimizes 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 after the first few months of operation, but even many years later.
- **Transparent:** Seamless monitoring of storage system health down to the cell level.
- **High-performing and fast-reacting:** Thanks to the battery management system, TESVOLT's storage systems make their energy fully available. TESVOLT storage systems are 1C-capable, meaning they can be completely charged or discharged within an hour with the proper configuration. This enables them to run even powerful equipment when the sun can't provide enough energy alone.

Project facts and figures

Storage system:	TS 48 V, made in Germany by TESVOLT
Energy content / Discharging power:	38,4 kWh / 18 kW
Cell:	Lithium NMC prismatic (Samsung SDI)
Efficiency (battery):	Up to 98%
Cycles:	6,000 to 8,000 (0.5C- to 1C at 23° C +/- 5° C with a 100% depth of discharge)
Operating temperature:	-10 to 50° C
Battery inverter:	SMA Sunny Island
Installer:	B&W Energy GmbH & Co. KG

"We're big fans of TESVOLT. Their products are thoroughly impressive, installation couldn't be easier and the customer service is excellent."

Josef Busch, managing partner at B&W Energy

"I'm delighted with our new storage system — not only because it can withstand so many cycles, but also because I can expand it if we buy a milking robot in the future."

Matthias Kampert, farm owner

TESVOLT GmbH

Am Heideberg 31
06886 Lutherstadt Wittenberg
Deutschland | Germany

Phone +49 (0) 3491 8797 100
info@tesvolt.com
www.tesvolt.com