

# ENERGY ISLAND

TESVOLT  
Free to go green.

PV and storage expert makes itself  
and its customers self-sufficient



## PROFILE

**Client:**  
Energieinsel GmbH

**Industry:**  
Photovoltaic and storage systems

**Special characteristics:**  
Self-sufficient grid with emergency power generation and charging infrastructure

**Region, country:**  
Oberkrämer, Brandenburg, Germany

## THE BACKGROUND

Energieinsel GmbH has been active in the field of photovoltaic and storage systems since 2012. The company's name – "energy island" in English – is also something of a mission statement: Energieinsel aims to make people and companies energy-independent. Since its founding, an almost 100-strong workforce at Energieinsel have installed more than 1,300 storage systems and over 7,000 photovoltaic installations, primarily in private homes but increasingly in commercial properties as well.



## THE CHALLENGE

In its work, Energieinsel places great importance on thoroughly testing all products in its own portfolio itself and providing its customers with as detailed a picture of its products as possible. In this aim, they are aided in part by a large exhibition space in which customers can examine the numerous storage systems and solar installations under operating conditions.

With the move of its headquarters to Oberkrämer in 2018, Energieinsel had it in mind to take the next step and put the company name into practice by creating an energy-independent "island" of its own. The idea was to secure the operation of the 1,085 m<sup>2</sup> company headquarters and expand the showroom with a fully functioning live system based on an emergency power supply.

Critical electrical infrastructure at customers' locations, such as cooling units and feeding machines, need to keep working even in the event of a power outage. Energieinsel wants to offer such companies a

professional solution. While diesel generators are a time-tested means of emergency power generation, using them is environmentally harmful and maintaining them is cumbersome. Powerful lithium-ion battery storage systems can back up complex commercial infrastructure not only more sustainably, but more cost-effectively as well.

### The requirements for a storage solution:

- Suitability for isolated operation, to be able to operate and use the company's own electricity grid, including a photovoltaic installation, even without a public utility grid
- High storability with many guaranteed cycles for sustainable provision



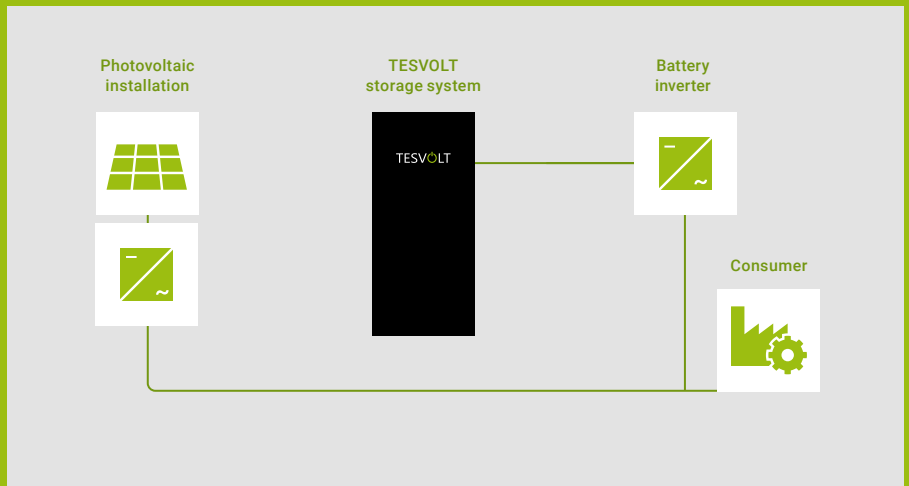
BACK-UP POWER



SELF-CONSUMPTION  
OPTIMISATION

## THE SOLUTION

To create its own “energy island”, Energieinsel GmbH sought a storage system with high power output and uptake as well as the ability to function as an off-grid power source. As the TS 48 V from TESVOLT was the only system available at the time of setup that could fulfil the requirements satisfactorily, the decision proved an easy one. The TS 48 V installed at Energieinsel has an energy content of 144 kWh and a discharging power of 54 kW.



»For our customers, we put all the products that we sell through their paces. We unreservedly recommend TESVOLT, including as a back-up solution.»

Rico Rückstadt, Managing Director, Energieinsel

## THE ADVANTAGES

- **Grid-forming unit**  
In the event of a power outage, the TS 48 V supplies back-up power for the entire operation on its own.
- **Safe and long-lasting**  
The system boasts an above-average lifespan of up to 30 years thanks to extremely robust Samsung battery cells and a one-of-a-kind battery management system. This optimises cells not only within a single module but also between modules within a 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.
- **Powerful and responsive**  
Thanks to the battery management system, TESVOLT storage systems make the energy they accumulate fully available. TESVOLT storage systems are 1C-capable, meaning they can be fully charged or discharged in one hour with the proper configuration. As a result, even high-performance consumers can be kept running when the sun isn't providing enough power.

## PROJECT: FACTS AND FIGURES

Storage system	TS 48 V
Energy content	144 kWh
Discharging power	54 kW
Cells	Lithium NMC prismatic (Samsung SDI)
Efficiency (battery)	Up to 98%
Cycles	6,000–8,000 (0.5C to 1C cycles, at 23°C +/-5°C with 100% depth of discharge)
Operating temperature	-10°C to 50°C
Battery inverter	SMA Sunny Island
Installer	Energieinsel GmbH

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