

RECHARGING WITH A MINIMAL FOOTPRINT

Peak shaving with electric vehicle charging stations



PROFILE

Client:
be.storaged GmbH

Industry:
Energy supply

Special characteristics:
Public installation

Region, country:
Oldenburg, Lower Saxony, Germany

THE BACKGROUND

be.storaged GmbH is a subsidiary of EWE. The company implements energy storage projects of different sizes for the energy company and other customers. In autumn 2018, it erected a high-speed charging station in a car park popular with commuters in Oldenburg-Haarentor, right next to the A28 motorway.



THE CHALLENGE

The energy transition is coming, bringing green mobility with it. To ensure that electric vehicles don't come to a standstill, charging stations need to be able to recharge them as quickly as possible. However, fast e-vehicle charging causes high peak energy loads due to the desired high speed. Grid connections designed for these kinds of peak loads need to be particularly powerful, which carries a cost.

Peak energy loads can be "absorbed" by a high-performance battery storage system. This means that the peak energy load is generated by discharging the battery instead of being drawn from the grid. To this end, the storage system saves the charging station operator a lot of money. The battery storage system can then be charged without burdening the grid, for example overnight, when the fuel pump is less in demand.

In order to charge electric vehicles in urban areas within the public transport infrastructure, the charging infrastructure must

have a compact design so that it can be installed in car parks or lay-bys. Not only can modern battery storage systems meet this requirement, they can also be operated in places where the grid infrastructure is unable to provide a sufficiently high output, such as in sparsely populated areas.

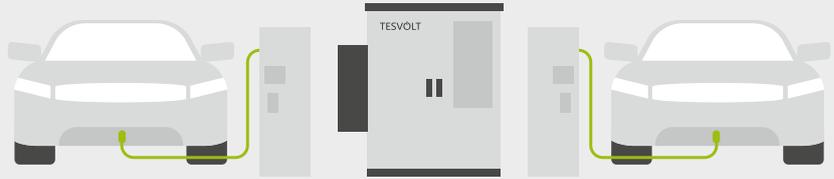
Requirements for a storage solution:

- small footprint and robust design suitable for direct installation in a commuter car park
- high output power level with a high C-rate for quick electric vehicle charging



THE SOLUTION

To equip the charging station in Oldenburg-Haarentor with a battery storage system, be.storaged GmbH opted for the TESVOLT TS HV 70 Outdoor system. The storage system takes up a floor surface area of just 2 sqm and offers an energy content of 67 kWh with an output power of 60 kW, making the system the optimal choice for supplementing charging stations either in public spaces or far away from grid infrastructure.



“The installation of the first Outdoor storage system from TESVOLT marks the breaking of new ground. With this reliable, German-made storage system, we are taking the burden off the power supply grid and are now one step closer to achieving a feasible and efficient grid infrastructure in Germany, and thus green mobility.”

Dr. Magnus Pielke, Managing Director at be.storaged GmbH

THE ADVANTAGES

- The charging station can be operated with a less powerful and costly grid connection.
- The storage system takes up very little space thanks to its high power density and small size (1,945x1,989x1,030 mm) and, as such, can be installed directly at charging stations.
- With its high level of impact protection (IK10) owing to the high-quality Rittal casing with double-walled aluminium, the TS HV 70 is ideal for demanding environments such as lay-bys and petrol stations.
- Since time is of the essence for drivers, the storage system offers high charging power. TESVOLT storage systems are 1C-capable, which means that they can be completely charged or discharged in one hour if configured accordingly.
- The system boasts an above-average service life of up to 30 years thanks to robust Samsung battery cells and one of the most advanced battery management systems on the market.
- The storage solution is extremely easy to set up as it is delivered as a turnkey system complete with all the necessary components, including a concrete base, temperature control system and inverter.

PROJECT: FACTS AND FIGURES

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|-----------------------|---|
| Storage system | TS HV 70 Outdoor |
| Energy content | 67 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 | -33 to 55° C |
| Battery inverter | SMA Sunny Tripower Storage 60 |
| Installer | be.storaged GmbH |

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