

SUSTAINABLE

VILLA

Battery storage makes a residential house self-sufficient



PROFILE

Client:
Private

Industry:
Residential use

Special characteristics:
E-vehicle charging intended

Region, country:
Brussels, Belgium

THE BACKGROUND

A family of four has recently moved into a large multi-storey house in a suburb of the capital Brussels. The son of the family is an IT-specialist and equipped the new house with many amenities. In addition to a heated swimming pool, the house has air conditioning and a tempered wine cellar.



THE CHALLENGE

Despite its liberalization in 2014, the Belgian electricity market still has some peculiarities. High market dominance of a few large energy companies, especially in the Brussels metropolitan area, comparatively low self-generated electricity, a high import rate especially in winter and regular black-outs do not make it easy for consumers to get fair energy prices. This makes the use of self-generated electricity in the kingdom very attractive not only for commercial actors, but also for private users.

The family from Brussels sought appropriate advice and installed a solar system with a peak output of 14 kWp in the garden. The plant generates electricity mainly during the day, i.e. at times when the family is usually not at home, but at work or at school. In order to use the electricity produced during the day, the family still needed an electricity storage system. In addition, the family wanted to be protected in the event of a power outage and not only being able to continue using consumers in the house without restriction, but

also to be able to continue operating sensitive computer applications. In addition, the family plans to acquire an electric vehicle that can be charged at night via the battery storage system when solar power can no longer be produced.

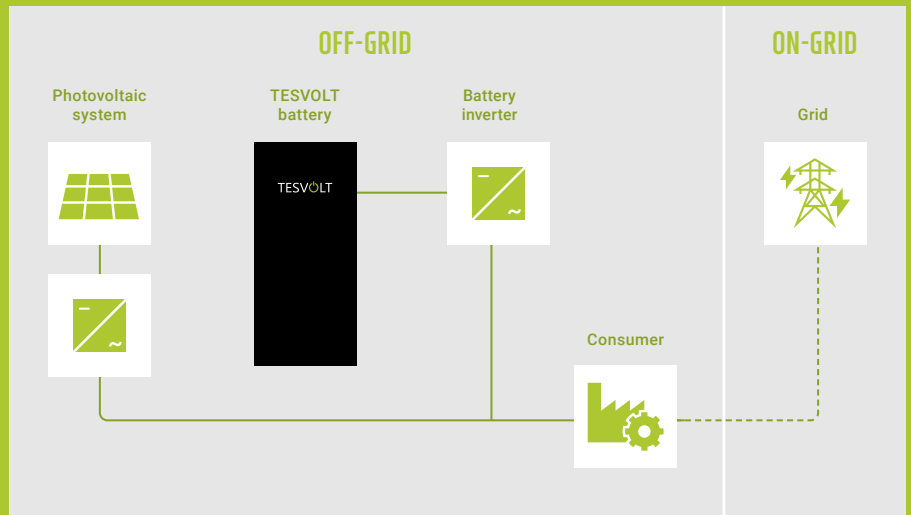
Requirements for a storage solution:

- Backup function in the case of a blackout
- Expandable and powerful storage system that enables ev-charging
- Sustainable and long-lasting investment



THE SOLUTION

Guus Luppens from the electronics and solar specialist Group VHC knew storage systems from the German company TESVOLT well, because he already had a storage system from them in his own basement. At the request of the family, he recommended the TS 48 V, although it was originally designed for industrial applications. In combination with 3 SMA Sunny Island inverters, it offers a power of 18 kW with an energy content of 14,4 kWh and can independently build an internal grid should the public one collapse.



“Although TESVOLT products are actually at home in commercial applications, their enormous longevity also make them interesting for private customers.”

Guus Luppens, Sales Manager of Group VHC

“We are 100% satisfied with the purchase of the Tesvolt battery. Next to my work I don't have time to worry about details, so I'm very happy that the device just works and that for very long.”

Son of the family

THE ADVANTAGES

• High-performing and fast

Thanks to the unique battery management system, TESVOLT's storage systems make energy fully available. TESVOLT storage systems are 1C-capable, meaning they can be completely charged or discharged within an hour with the proper configuration. And the charging speed of 1C means that even high-performance electrical equipment can be kept running when the sun is not shining.

- Power-forming unit that, in the event of a blackout, ensures the power supply of the entire house automatically.

• Durable

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, 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.

PROJECT: FACTS AND FIGURES

Storage system	TS 48 V
Energy content	14,4 kWh
Discharge power	9,9 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	3 x SMA Sunny Island
Installer	Group VHC

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