

Harvest your own energy!

Case study with farmer Peter Hecht



Source: next-kraftwerke.de/unternehmen/referenzen/biogas-speicher



The case

Project:

Installation of battery storage system for peak-shaving with self-generated renewable energy in agriculture.

Customer/Project:

Peter Hecht,
Farmer in Germany

Installed system:

1 x Solition Powerbooster
(10ft container system)

Connection:

On-grid

Installed battery capacity:

264 kWh

Location:

Bavaria, Germany

Installation date:

2023

The background

The sunny side of energy costs.

Farmers managing both livestock and field agriculture, face additional challenges in energy management. In their daily routine, they must balance the energy demands of operating machinery with those required for managing livestock, including heating, ventilation, and feeding systems. This dual aspect of his agricultural operation intensifies the need for effective energy management strategies to ensure the smooth functioning of both livestock and field operations while minimizing costs and environmental impact.

The journey towards implementing customized energy solutions for Peter Hecht's farm began with an encounter at a trade fair. Against the backdrop of soaring electricity and energy prices, escalating from 11 cents/kWh to over 30 cents/kWh, Peter faced a critical juncture.

With the imminent expiration of feed-in tariffs for his self-generated electricity, Peter Hecht anticipated a decline in profits from electricity sales. Consequently, the shift towards prioritizing the self-consumption of self-generated electricity emerged as a financially prudent strategy.

Looking to the future, Peter Hecht shared his vision of greater energy autonomy and aimed to maximize self-consumption of the electricity he generated. He wanted to rely solely on self-generated electricity and use the battery to bridge fluctuations in energy production on his farm without drawing energy from the grid. In addition, Mr. Hecht emphasized his commitment to optimizing energy consumption by managing peak demand using peak shaving techniques.

The challenges

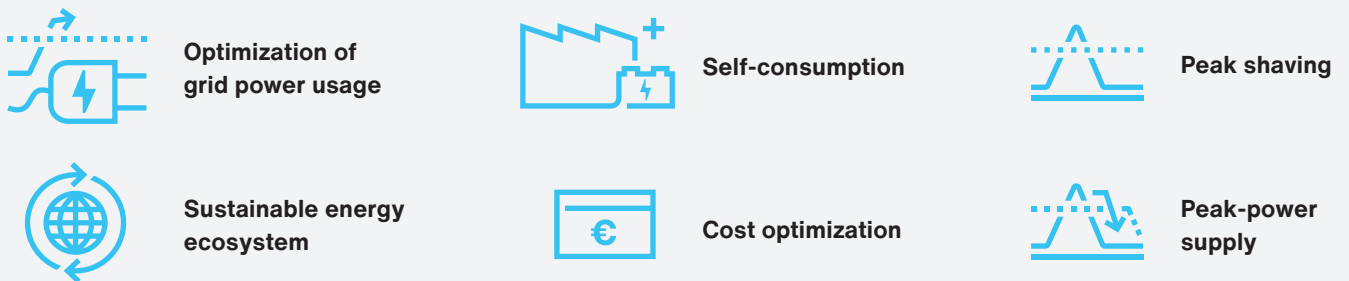
- 1** **Optimizing energy consumption and reducing costs:**
Farmers in the agricultural sector must find ways to optimize their energy usage to minimize costs, especially as traditional energy sources become more expensive.
- 2** **Navigating increasing governmental regulations and restrictions:**
The evolving regulatory landscape poses challenges for farmers, limiting their autonomy and requiring compliance with new rules and regulations.
- 3** **Managing strain on local power grids:**
Overloading of local power grids leads to disruptions in electricity supply, necessitating solutions like decentralized energy storage systems to alleviate pressure and ensure reliability in energy supply.

The objectives

Peter Hecht’s objectives center around achieving energy independence and self-sufficiency on his farm. This entails maximizing the utilization of self-generated electricity, thereby reducing reliance on external energy sources. By prioritizing self-consumption, Peter Hecht seeks to minimize his farm’s dependence on the grid and enhance its energy resilience. Through this transformation, Mr. Hecht not only secures his farm’s energy future but also embraces a broader role as an active participant in the energy landscape. Exide Technologies aims to empower farms to harness renewable energy sources effectively while minimizing environmental impact.

User benefits

Peter Hecht now benefits from reduced energy costs, increased energy independence, and enhanced reliability in energy supply. By leveraging the Customised Energy Systems (CES) solution, he can optimize his farm operations, minimize the environmental impact, and contribute to a more sustainable energy ecosystem.





Scan for more info

The system and its implementation

Central to Peter Hecht’s quest for energy autonomy was the deployment of the Solition Powerbooster 10ft container system, a leading energy storage solution from Exide Technologies. This state-of-the-art system comprises eight battery cabinets capable of storing up to 264 kWh of energy. Moreover, the system integrates four bidirectional inverters, providing a combined power output of 120 kW.

The Solition Powerbooster system emphasizes Exide Technologies’ commitment to innovation and sustainability. Designed to meet the demanding needs of modern agricultural operations, this solution offers outstanding reliability and efficiency. With its robust storage capacity and impressive power output, the Solition Powerbooster system allows Mr. Hecht to effectively manage energy peaks, optimize self-consumption and reduce its dependence on external energy sources.

The implementation of Exide Technologies’ Solition Powerbooster system was carried out together with local partners and represents an important milestone in Peter Hecht’s journey towards energy independence, showcasing the transformative impact of advanced energy storage technologies in agricultural settings.

Mr. Hecht actively supported the installation process, utilizing his machinery and collaborating closely with local electricians to ensure seamless integration. The outstanding cooperation between all parties involved was instrumental in the successful implementation of the system.

System overview:

Size:	1 x Solition Powerbooster (10ft container system)
Installed battery capacity:	264 kWh
Converter power:	120 kW
Communication:	4G mobile data network
Grid connection:	On-grid
Site Energy Management:	Behind-the-meter application

The results and achievements

The installation of the Solition Powerbooster container at Peter Hecht's farm represents a significant achievement in combining agriculture with sustainable energy solutions. By optimizing self-consumption and harnessing peak shaving capabilities, Mr. Hecht can reduce energy costs and increase energy independence.

When strategy works: the key facts

100%

Integration into existing system control

70 kW

Reduction of the peak load

9

months

From first contact to realization

2

days

For complete final installation

The advantages of Customized Energy Systems (CES)

The Solition Powerbooster 10ft container system, designed and assembled in Europe, represents innovation and reliability, offering tailored solutions for agricultural operations, like Peter Hecht's farm. However, what distinguishes CES even further is the holistic approach and comprehensive support provided by Exide Technologies.

Exide Technologies' commitment to service, partnerships and ongoing assistance ensures that CES solutions are seamlessly integrated into existing operations. With Exide, it's not just about delivering and installing a product but creating a long-term partnership.

A good working relationship and full support were also key factors in Peter Hecht's decision to work with Exide Technologies. And this is only possible if the contact partners are nearby and therefore always accessible.

Moreover, Exide Technologies offers versatile applications, allowing for combined usage scenarios tailored to specific needs. Through a deep understanding of the application and meticulous attention to detail, Exide crafts bespoke solutions that precisely address the challenges faced by farmers.

So, why choose Exide Technologies? The answer lies in the level of service, cooperation, and comprehensive support. With CES, backed by our expertise, farmers can confidently embark on their journey towards energy autonomy, knowing they have a trusted partner every step of the way.

A perfect match

About Customized Energy Systems

In 2021, global player Exide Technologies acquired ATEPS Nederland BV, an innovative and dynamic provider of lithium-ion based energy storage and its management in future key applications, such as time shift, frequency control, peak shaving, energy trading and more.

Combining innovation and global energy storage expertise, they become Customized Energy Systems, thereby making the use of sustainable energy through smart energy storage accessible to more regions and projects.

Customized Energy Systems develops, builds and delivers energy storage systems (ESS) to transition from fossil energy over to renewables. Its focus, for a successful and sustainable future, is on storage systems and solutions for greenhouse gas reduction and an optimization of TCO in energy-intensive industries.

We offer all the fields of operation that ensure that renewable energy is available at any time in any place and meet all the requirements that businesses demand.



Boosting



Balancing



Operating



Generating



Trading

About Exide Technologies

Exide Technologies (www.exidegroup.com) is a leading provider of innovative and sustainable battery storage solutions for automotive and industrial applications. With 135 years of experience, Exide has developed and globally marketed innovative batteries and systems, contributing to the energy transition, and driving a cleaner future. Exide's comprehensive range of lead-acid and lithium-ion solutions serves various applications, including 12V batteries for combustion and electric vehicles, traction batteries for material handling and robotics, stationary batteries for uninterruptible power supply, telecommunication, utility in-front-of and behind-the-meter energy storage and propulsion batteries for submarines and more. Exide Technologies' culture and strategy are centered around recycling, sustainability, and environmental responsibility, reflecting the commitment to being a responsible corporate citizen.

The company has 10 manufacturing and 3 recycling facilities across Europe, ensuring resilience and a low CO₂ footprint with a local supply chain. Exide Technologies is committed to superior engineering and manufacturing. With a team of 5,000 employees, the company provides 1.6bn Euro of energy storage solutions and services to customers worldwide, every year.

Creating the future – the Exide Technologies way:



Innovation



Reliability



Sustainability



High Performance