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The be.storaged magazine
on the energy industry

Issue 2025

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Optimizing charging efficiency:

okean at EWE Go & EWE Go Hochtief

With the rapid expansion of electric mobility, ensuring a stable and efficient charging infrastructure is becoming a key challenge. Hyperchargers place significant strain on the grid, and without smart energy management, charging hubs risk inefficiencies, high grid costs, and grid overloads. To address this, we at be.storaged have partnered with EWE Go and EWE Go Hochtief to implement a cutting-edge energy management solution, optimizing power distribution, reducing costs, and preparing for future energy challenges.

The Challenge: Managing High Demand and Grid Constraints

EWE Go operates numerous high-power charging locations equipped with Hyperchargers. However, at peak times, the available grid connection often falls short of the total charging power required. This imbalance not only risks overloading the grid but also limits charging speed and efficiency.

Additionally, EWE Go faced the challenge of integrating real-time signals from grid operators. These signals are crucial in optimizing charging behavior, especially in areas where grid stability is a concern. Without an intelligent management system in place, adapting to these signals and ensuring seamless operation was becoming an increasing challenge.

At the same time, EWE Go Hochtief, a joint venture between EWE Go GmbH and HOCHTIEF AG, was awarded a contract for over 100 charging locations as part of the Deutschlandnetz, a public charging infrastructure initiative by the German Federal Ministry for Digital and Transport (BMDV). These sites, scheduled to go live in 2025 and 2026, will provide high-power charging across Germany, with capacities ranging from 800 kW to 3.2 MW per site. Just as with EWE Go, we at be.storaged signed a contract to provide our load management system to Deutschlandnetz locations.

The Solution: Dynamic Load Management & Peak Shaving

To address these challenges, we deployed our energy management system (EMS), okean, delivering several key benefits:

Dynamic Load Management: okean intelligently distributes available grid power across multiple charging points in real time, preventing overload and ensuring efficient power usage.

Peak Shaving: By strategically managing power consumption, okean reduces high grid demand spikes, lowering electricity costs by minimizing peak loads, which are typically charged at premium rates.

Grid Signal Processing: okean seamlessly integrates and responds to grid operator signals, optimizing charging sessions based on real-time grid conditions.

Atypical Grid Usage: Through optimized charging behavior, okean allows EWE Go to benefit from lower grid fees, mak-

ing their entire charging infrastructure more cost-efficient.

One of the key advantages of this deployment was its minimal hardware footprint. Installation space in transformer stations is limited and expensive, making traditional energy management solutions difficult to implement. To overcome this, we deployed okean on a small IoT-Gateway, eliminating the need for bulky hardware while maintaining full system functionality.

The Results: A Major Step Towards Smart Charging

In 2024, we successfully enabled atypical grid usage at a pilot site, optimizing power consumption and significantly reducing grid fees – without the need for battery storage. This milestone demonstrates how intelligent software solutions can enhance EV charging infrastructure, making it more flexible, efficient, and cost-effective.

With real-time monitoring, load balancing, and predictive control, okean ensures that both EWE Go and EWE Go Hochtief's charging networks operate at maximum efficiency while remaining adaptable to future energy innovations.

As EWE Go Hochtief prepares to roll out its 100+ charging sites across Germany's Deutschlandnetz, we are proud to power their load management and support the nationwide expansion of smart EV charging. Through EWE Go's partnerships with major brands like McDonald's and Lidl, our technology is also integrated into their charging infrastructure, ensuring efficient and scalable energy management. With further expansions planned, this partnership marks a significant step towards a cost-efficient and sustainable e-mobility future.

Thomas Riedel GmbH adopts smart energy solutions with PV and battery storage

At be.storaged, we are proud to highlight Thomas Riedel GmbH's major step toward energy efficiency and sustainability with the implementation of a cutting-edge photovoltaic (PV) and battery storage system. Now fully operational, the project integrates a 1 MWp solar array with a 1.38 MWh battery capacity, optimizing energy consumption, reducing costs, and increasing self-sufficiency.

A Smart Solution for Energy Management

The system is managed by our advanced energy management platform, okean, which enables Thomas Riedel GmbH to achieve the following:

Maximize Self-Consumption: The system maximizes on-site energy usage by storing surplus power in the batteries and deploying it when demand exceeds generation.

Reduce Energy Costs: Our smart automation shifts energy usage to times when electricity prices are lowest. The battery charges itself with inexpensive electricity and releases the stored energy when electricity prices rise.

Control Peak Demand: okean helps prevent costly demand spikes by strategically distributing power, thereby lowering grid fees.

Project Execution & Collaboration

This project was executed in close collaboration with EWE Vertrieb, which handled the PV installation, and with us at be.storaged, who managed the battery supply and system integration. With the system now fully connected to the facility's grid, Thomas Riedel GmbH has gained independence from volatile energy prices while also capitalizing on favorable market conditions by selling surplus electricity at advantageous times.

Operational Benefits and Long-Term Impact

By combining PV generation with battery storage and utilizing okean, Thomas Riedel GmbH is now able to:

Enhance Self-Sufficiency: A significant portion of the facility's energy needs is now met through self-generated and stored power, reducing reliance on the grid.

Reduce Energy Costs: Smart energy management enables cost savings by taking advantage of dynamic pricing and minimizing peak loads.

Improve Sustainability: The facility reduces its carbon footprint by optimizing renewable energy use and decreasing its dependency on fossil-fuel-based electricity.

Project development from the ground up: Visbek ready to build

Developing and realizing Utility Scale battery storage systems requires more than just a great idea – it takes careful planning, in-depth technical analysis, and close coordination with all relevant stakeholders, from customers and suppliers to authorities, assessors, and grid operators.

Our Visbek project is a strong example of this process. The 20 MW / 40 MWh battery storage system has now reached the Ready-to-Build (RTB) stage, with construction scheduled to begin in summer 2025. From identifying and securing suitable land and grid connections to managing permitting and technical planning, we've led the entire development process from start to finish.

This includes land acquisition followed by preliminary building requests or full applications and the reservation of grid connections, always taking into account grid capacity and voltage levels. With the necessary approvals in place, including the building permit, the project has now officially entered the EPC phase.

Visbek marks a major milestone in our development journey and strengthens the foundation for future battery storage projects across Germany.

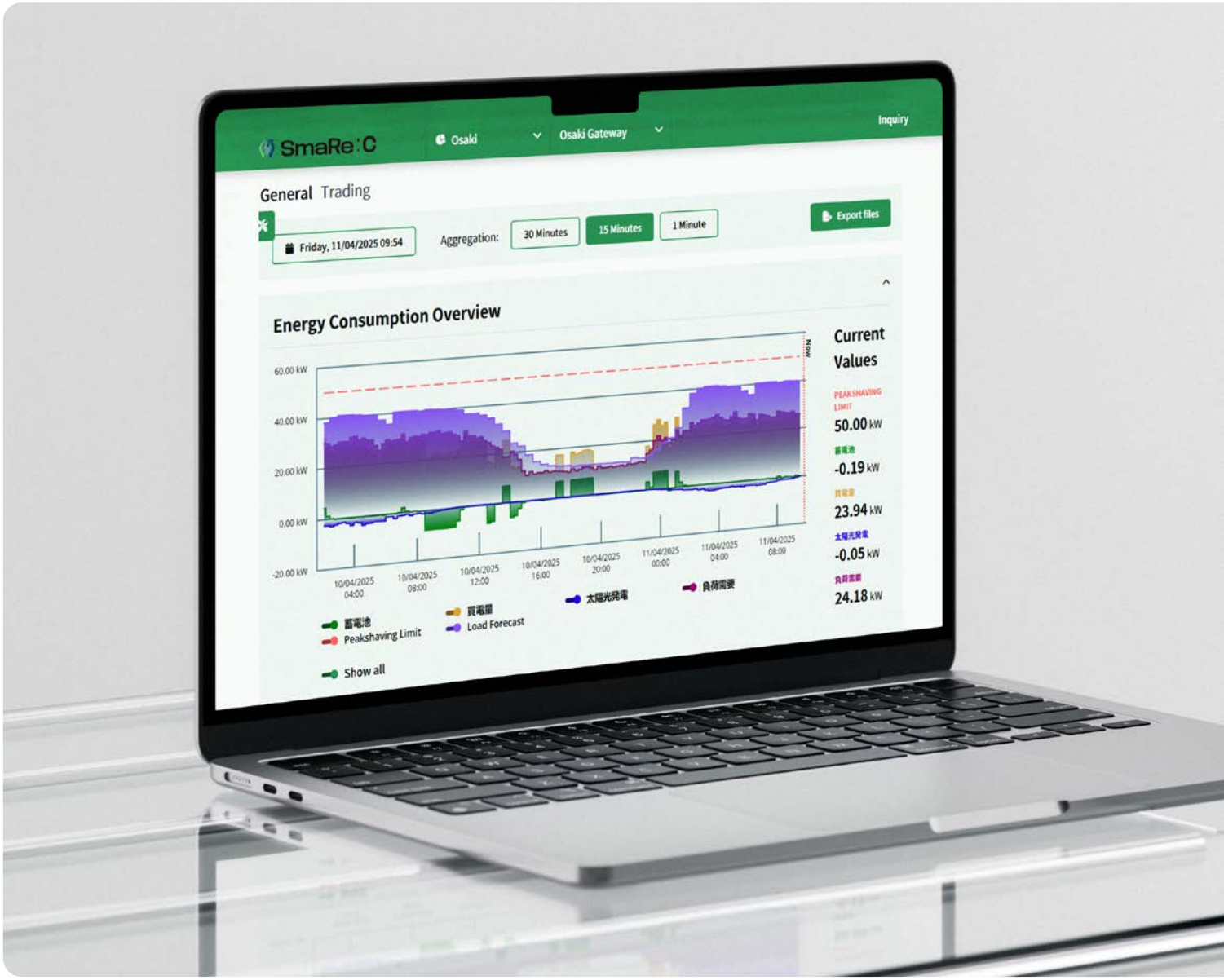
Bollerwagen meets business

In March 2025, be.storaged took a different route to connect with partners and customers – literally! Instead of a trade fair or conference, be.storaged invited guests to experience a true Northern German tradition: a Grünkohltour through Oldenburg.

Bringing business and culture together, the day began with a warm welcome, inspiring keynotes, and a World Café session focusing on the key issues facing the large-scale battery storage industry.

Then it was time to hit the road – with a wagon full of treats, classic games, and lots of good vibes. From tea bag tossing to the crowning of the cabbage king and queen the tour gave our guests a hands-on taste of local tradition.

The day was wrapped up with a hearty kale dinner and great conversations that lasted well into the evening.



okean EMS, custom-tailored and seamlessly integrated into Osaki's EMS interface

We integrate our EMS

– okean – into Osaki's hardware in Japan

We have successfully integrated our advanced energy management system (EMS), okean, into the hardware of Osaki, one of Japan's leading energy providers. This marks a significant milestone in our journey as we expand into the Japanese commercial and industrial (C&I) market – empowering businesses to optimize their energy usage and reduce costs through intelligent battery storage solutions.

Optimizing Energy Usage for C&I Customers in Japan

Osaki, renowned for its expertise in commercial energy management, sought to enhance its capabilities in peak shaving and procurement optimization. Through the integration of our EMS, okean, Osaki can now deploy advanced energy optimization strategies to better navigate fluctuating energy demands and dynamic market conditions.

Peak shaving helps reduce demand spikes and lower energy costs, while procurement optimization ensures electricity is sourced during the most cost-efficient periods. These functionalities are vital in Japan's evolving energy landscape, which increasingly emphasizes grid stability and effective cost management.

Seamless Digital Integration – No Hardware Required

Unlike conventional EMS integrations, we did not need to ship any hardware to Japan. Instead, Osaki provided its own device, allowing us to perform direct compatibility tests with our okean software. This integration represents not only a technical achievement but also a testament to our team's performance and dedication. We undertook extensive efforts to ensure that okean functioned smoothly on third-party hardware, carrying out detailed testing with Osaki's Aiel Master device in our lab.

This integration is not a one-time implementation – it marks the beginning of an ongoing collaboration. We continue working closely with Osaki to ensure long-term performance, adaptability, and mutual success.

In addition to backend integration, we also embedded our frontend into Osaki's portal. Thanks to our white-label flexibility and manufacturer independent approach, all data generated by okean is fully accessible and custom-tailored within Osaki's EMS interface.

The integration runs through a single interface, enabling both EMS platforms to exchange critical energy data. Our EMS, okean, forecasts battery operations for the upcoming week based on market signals, electricity prices, and grid conditions. At the same time, Osaki's EMS delivers weather forecasts, PV generation estimates, and load predictions – while also reinforcing its forecasts through load management to ensure that the planned battery schedule is executed as precisely as possible. The result is a fully optimized, AI-free, linear optimization model that drives both efficiency and cost savings.

A Scalable Solution for Japan's Energy Transition

With Japan's growing emphasis on decentralized energy systems, smart grid innovations, and a liberalizing electricity market, this project sets a strong benchmark for future C&I energy management strategies. The flexible and scalable nature of our EMS allows for seamless integration into other industrial systemsenhancing energy efficiency without requiring additional hardware on site.

Review of the year

A milestone in efficiency – no coding, just simplicity!

With the launch of the new calendar feature in our energy management system okean, we've taken managing operating modes to the next level. Now, time slots and settings can be planned just like in Outlook – no coding required. This intuitive tool gives users a clear overview of configurations and simplifies daily operations. It's a game-changer for system management.

2024 MILESTONE

Empowering partners with tailored solutions

In 2024, we unlocked full white-labeling capabilities in our platform. This allows our partners to customize and present okean entirely in their own corporate style – with a fully flexible interface and seamless integration via Single Sign-On. End-users enjoy a smooth experience without even realizing they're working in a branded environment.

2024 SERVICES

be.storaged EMS at EWE Go and EWE Go Hochtief

Following a successful pilot phase, we implemented dynamic load management and peak shaving at EWE Go and EWE Go Hochtief charging sites. Our EMS platform, okean, optimizes power distribution across multiple Hyperchargers, ensuring efficient infrastructure operation – even during peak demand. We also successfully enabled atypical grid usage at a pilot location, paving the way for smarter, more cost-effective EV charging.

DECEMBER 2024 PROJECT

Utility Scale battery storage

The demand for Utility Scale battery storage continues to rise, and we're proud to be at the forefront. In January 2025, we completed our 10.35 MW project in Tittling. Construction of the 10.35 MW system in Untersteinach – launched in late 2024 – is well underway. And this year, we broke ground on our largest project yet: Döbeln, with a capacity of 15 MW. With a combined total of 35.7 MW, these projects help stabilize the grid, integrate renewables, and strengthen energy resilience.

JANUARY 2025 MILESTONE

Smart energy solutions for Thomas Riedel GmbH

Together with EWE Vertrieb, we delivered a comprehensive PV and storage solution for Thomas Riedel GmbH. The system, now fully operational, includes a 1 MWp solar array and a 1.09 MW / 1.38 MWh battery. With okean at the core, the EMS platform smartly shifts energy use, reduces demand peaks, and boosts efficiency. This project empowers the customer to optimize self-consumption, lower energy costs, and reduce reliance on the grid – while advancing sustainability goals.

FEBRUARY 2025 PROJECT

E-world 2025: United for the future of energy

In February 2025, we proudly joined the E-world energy & water trade fair in Essen. Together with our parent company EWE AG and several sister companies, we brought collaboration and innovation to the spotlight. With so much talent under one roof, our booth became a vibrant hub of ideas, discussions, and shared visions for the future of energy. A great event, powered by strong teamwork and forward-thinking perspectives.

FEBRUARY 2025 MILESTONE

Our first fully in-house project development for Utility Scale solutions

We've reached a new milestone with the 20 MW / 40 MWh Utility Scale battery project in Visbek. Developed entirely in-house, the project has now entered the Ready-to-Build (RTB) phase. Construction will begin in summer 2025, and commissioning is planned for Q1 2026. This marks a major step in our growth as an end-to-end solution provider in large-scale energy storage.

MARCH 2025 MILESTONE

We break ground on our first fully co-developed and EPC Utility Scale project

We at be.storaged have officially begun construction on our first Utility Scale battery storage project that we co-developed from the ground up, together with our partners at sdp energie. Following the successful development phase, we are now taking full responsibility for EPC (Engineering, Procurement, and Construction), and we will also manage future operation and maintenance (O&M).

Located in Döbeln, Germany, the 15 MW / 30 MWh system is designed to enhance grid stability and support the integration of renewable energy by balancing fluctuations in wind and solar power generation. By storing excess energy during high production periods and supplying it when needed, the facility will play a key role in ensuring a more resilient energy system.

In this project, sdp energie, in collaboration with us at be.storaged, led the complete development up to the ready-to-build stage. Once the project reached this milestone, it was acquired by terralayr, who entrusted us with full EPC responsibility. This smooth handover from development to construction, backed by our technical expertise in Utility Scale battery systems, ensures efficient execution while minimizing risks and delays.

Equipped with Trina Storage batteries, the Döbeln facility will form part of a broader digital energy flexibility platform. This enables energy producers, grid operators, and businesses to access virtual storage capacity, contributing to a smarter and more adaptable energy landscape.

The Döbeln project adds to our growing portfolio of large-scale energy storage systems, including our earlier projects in Tittling and Untersteinach. Through these developments, we continue to drive innovation in energy storage and solidify our role in accelerating the energy transition.

be.part of be.storaged

We believe in thinking differently to find the best solutions. Every project is unique – and so are the people behind it. Our commitment, flexibility, and creativity help us bring tailor-made energy storage solutions to life.

We are a dynamic and motivated team with fast communication, and short decision-making paths. Backed by EWE AG as our holding company, we combine the strength of a large company with a start-up mentality.

We're always looking for new colleagues who want to make a real impact in the energy transition – whether in engineering, project development, or operations.

Let's build the energy world of tomorrow – together.

be-storaged.de/unternehmen/karriere/

Dirkshof begins 40 MWh battery project in Northern Germany

In February 2025, be.storaged started construction on a 40 MWh / 20 MW stand-alone Utility Scale battery storage system for Dirkshof, a wind energy company based in Schleswig-Holstein, Northern Germany. The project is being fully delivered by be.storaged as EPC and is expected to be completed by the end of the year.

The system will enable Dirkshof to participate in multimarket trading, enhancing their operational flexibility and unlocking new revenue opportunities in the energy markets.

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Projects currently being built across Germany

Utility Scale:

The key to Germany's energy transition

Germany's energy transition is accelerating, driven by a growing reliance on renewables. However, the intermittent nature of wind and solar power presents challenges for grid stability and energy market profitability. To meet these challenges, Utility Scale battery storage systems are becoming essential – enabling renewable energy optimization, grid stabilization, and enhanced energy market efficiency.

be.storaged: Leading the Utility Scale Storage Market

With 200+ MWh currently under construction and 70 MWh in operation, we at be.storaged are at the forefront of large-scale battery storage development in Germany. We are currently building five Utility Scale projects, including our site in Untersteinach, reinforcing our position as an industry leader. By covering every stage of project development – from planning and procurement to construction and operation – we continue to set new benchmarks for battery storage solutions.

The Utility Scale storage market is expanding rapidly. In 2023 alone, 3.9 GW of battery capacity was installed in Germany, and projections estimate this will grow to 15 GW / 57 GWh by 2030 (Flu-

200+

MWh under construction

ence Energy, 2024). This rapid adoption is not only making renewable energy more profitable but also strengthening grid resilience and reducing the need for costly infrastructure upgrades.

The Importance of Utility Scale Battery Storage

Utility Scale battery systems store energy when generation exceeds demand and release it when consumption is higher. This ensures greater security of electricity supply and increases the profitability of renewable energy by enabling electricity sales during periods of high demand and favorable prices. In recent years, for example, installing battery storage with the same capacity as a wind farm has significantly increased the market value of that asset.

To further encourage development, Germany's Federal Network Agency has promoted renewable energy plants with battery systems through innovation tenders. These offer developers higher guaranteed revenues compared to conventional tenders under the Renewable Energy Act (EEG) – with innovation tenders shown to provide up to 25% more additional value.

Economic and Grid Stability Benefits

Electricity market volatility is another key driver. In 2024, the average day-ahead wholesale electricity price in Germany was €78.51/MWh – a 17.5% drop from the previous year's average of €95.18/MWh (Source: SMARD.de, 2024). As operators, we can capitalize on this volatility by purchasing electricity at lower prices, storing it, and selling it during price peaks.

At the same time, our battery systems help stabilize the grid by offering reserve capacity and responding within seconds to frequency fluctuations – critical for maintaining the grid's target frequency of 50 Hertz.

Key Projects: Tittling and Untersteinach

We've played a key role in integrating Utility Scale storage solutions across Germany. Two recent projects illustrate our expertise and contribution to the energy transition: Tittling and Untersteinach.

A major milestone is the Tittling project in Bavaria. This 10.35 MW / 22.83 MWh system is already operational, connected to the medium-voltage grid, and capable of powering up to 30,000 homes for two hours. It also contributes to grid stability by providing load balancing services and participating in the energy markets.

Meanwhile, in Untersteinach, also in Bavaria, construction is underway on a 10.35 MW battery system – equivalent to a ten-hectare solar park. Scheduled to go online by mid-2025, it will stabilize the local grid, prevent blackouts, and maximize renewable energy usage. This project is part of our broader development pipeline, which currently includes five additional Utility Scale projects under construction.

Both systems are integrated into a digital flexibility platform, optimizing economic performance and enabling broader access to energy storage across market players. Our client, terralayr, is leveraging this infrastructure to market stored energy in a highly innovative way.

The Future of Energy is Utility Scale Storage

As renewable capacity expands, Utility Scale battery storage is becoming the backbone of a flexible, resilient, and cost-efficient energy system. By developing advanced business models and deploying cutting-edge storage technologies, we are not just adapting to the future – we are shaping it. At be.storaged, we are proud to lead Germany's energy transformation from the front.

MWh in operation

How has battery storage transformed the energy market?

Battery storage is the catalyst transforming the energy system from the old, fossil-fuel-based world to the new, renewable-powered world. While renewable generation capacity has already had a huge impact on electricity pricing at spot markets, energy storage has still been lagging behind in this regard. However, battery storage holds immense potential to mitigate price volatility, both on a macroeconomic scale and for individual businesses.

In the past, the generation and consumption of electricity could always be balanced by dispatching fossil fuel generation to match demand. This is changing drastically because renewable generation, such as solar (PV) and wind power, does not provide this same flexibility.

Currently, we are already seeing the effects this has on our energy system. For example, the number of hours with negative spot prices has been increasing. This has led to a surge in the development of new battery storage projects, as they benefit from volatile prices.

And what should businesses prepare for in the next decade?

This effect will only intensify in the future. Both large-scale storage systems and batteries at industrial sites will offer great returns on investment. Additionally, battery storage has finally made its way onto the political agenda. Policymakers are beginning to recognize the positive impacts of flexibility and are starting to implement regulations that make investing in flexibility easier. That being said, there is still a lot of regulation that needs to be optimized for this new energy landscape.

be.storaged without borders

From China to Slovakia, 2024 took us around the world. We kicked off the year with a successful FAT (Factory Acceptance Test – a key quality check at the manufacturer's site before delivery) at Trina Solar for the Tittling project, followed by a visit to Power Electronics in vibrant Valencia, Spain. Back in China, we teamed up with Sungrow for another FAT, this time for the Untersteinach project. We also headed to Slovakia to dive deep into the Pixii battery system during an intensive training session.

2024 wasn't just about projects – it was about perspectives. Exploring new cultures, forging strong connections, and gaining invaluable insights across borders is a key part of how we work at be.storaged.

Because our systems are designed to be fully tailored to our clients' needs, and our EMS okean is open to working with various manufacturers, it's essential for us to understand the specific requirements of every technology we integrate. These hands-on experiences allow us to seamlessly adapt our software and ensure the best technical fit for each project. At the same time, staying up to date also strengthens our ability to deliver reliable, long-term maintenance services – ensuring that our clients benefit not only from cutting-edge technology, but also from ongoing performance.

Battery energy storage system

BESS Projects in Germany

Current projects and their total capacity:

70 MWh in operation

200+ MWh under construction

Imprint

be.storaged GmbH
Tirpitzstr. 39 | 26122 Oldenburg
Tel.: +49 (0) 441 350 197 0
Mail: info@be-storaged.com
Web: be-storaged.com

Images and illustrations
Izabela Mitwollen
iStockphoto
be.storaged

Text and editing
be.storaged

Design
schrift-und-form.de