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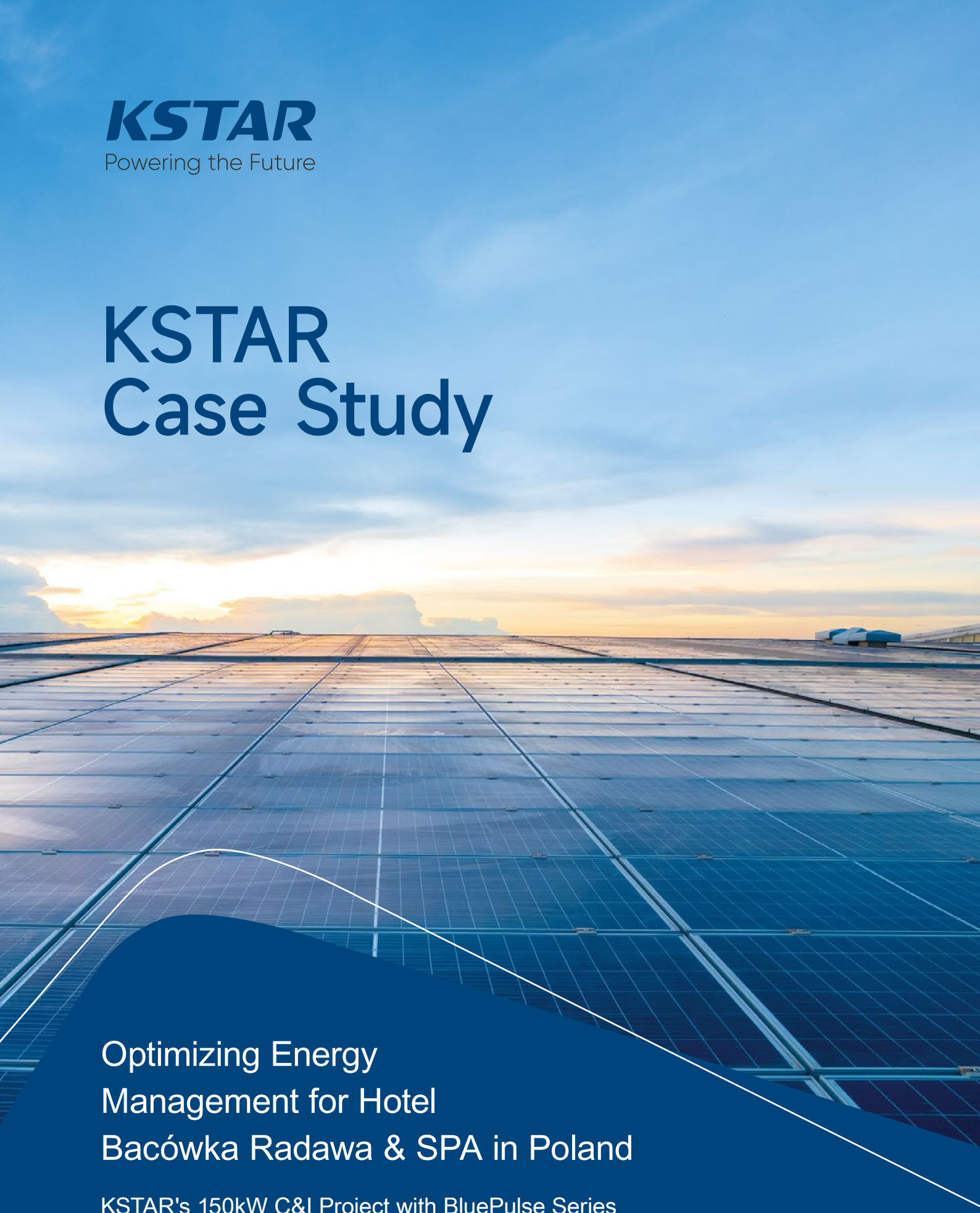
KSTAR Case Study



Optimizing Energy Management for Hotel Bacówka Radawa & SPA in Poland

KSTAR's 150kW C&I Project with BluePulse Series

www.kstar.eu

2024

Background

With the increasing focus on sustainability and energy efficiency, hotels are facing unique challenges in managing their energy demand curves. Especially those hotels that cater to leisure guests have a distinct pattern of high energy consumption during breakfast hours and evenings, owing to the usage of catering facilities and spa & wellness areas. These hotels are also often equipped with distributed rooftop and ground photovoltaic (PV) installations to harness solar energy. However, the mismatch between energy production and demand, along with limitations in grid connection power and low energy prices for grid sales, poses a significant challenge.

Client Profile

Hotel Bacówka Radawa & SPA is located in the southeastern part of Poland, picturesquely surrounded by beautiful, dense pine and spruce forests. It is designed as a space for customers who want to spend time in peace and close to nature. Facilities are available for use, including SPA complex, hot tub, outdoor jacuzzi, inflatables, barbecue area, equipment rental, etc. Given the energy required to maintain the operation of all these amenities, the hotel aims to reduce its energy costs and increase the self-consumption of solar energy.

Challenge:

The hotel faces the following challenges:

1) Limitation in grid connection power, which restricts the amount of energy that can be sold to the grid.
2) Multiple PV plants with varying production patterns, resulting in mismatch with the hotel's energy demand curve.
3) Introduction of a new hourly billing system, requiring peak shaving and increased self-consumption.
4) Extremely low energy prices for selling to the grid compared to energy costs.

Product Used:

KSTAR's BluePulse series, the KAC50DP-BC100DE all-in-one C&I energy storage solution, was implemented at the hotel. The system comprises 3 units of KAC50DP inverters and BC100DE batteries, integrated with the energy management system. This setup allows the hotel to charge and discharge batteries with a 150 kW power capacity, storing more than 300 kWh of energy during the day and utilizing it during peak demand hours. Powered by CATL battery cells, the KAC50DP-BC100DE solution outshines with exceptional safety, efficiency, and flexibility.

01 Safety

The system prioritizes safety through a dual fire protection design at both module and cabinet levels, along with a built-in HVAC system for efficient thermal management.

02 User-friendliness

The product can be easily installed on-site with factory pre-assembly. It has been integrated with smart EMS and KSTAR Cloud Platform featuring API interface for third-party connectivity.

03 Adaptability

The system features on/off grid switching with expandable capacity and is engineered for outdoor installation, capable of withstanding diverse weather conditions including temperature fluctuations and rain. The 1+1 dual-cluster battery cabinet design ensures enhanced system redundancy and reliability. Additionally, it offers the flexibility to integrate an STS (static transfer switch) cabinet for micro-grid applications if required in the future.

Implementation of the Project:

The KSTAR energy storage system was installed on-site, integrated with the existing PV plants and grid connection. The energy management system ensures optimal operation of the system, charging batteries during low-demand hours and discharging them during peak hours to meet the hotel's energy needs.

BluePulse Series
KAC50DP-BC100DE

Results:

1) Peak shaving: The energy storage system successfully shaved the morning and evening peaks, reducing the hotel's reliance on grid power during these high-demand hours.
2) Increased self-consumption: By storing excess energy during the day and using it during peak hours, the hotel achieved an increased level of self-consumption, reducing its energy costs.
3) Flexibility in energy management: The energy management system provided the hotel with flexibility in managing its energy usage, optimizing energy production and consumption patterns.

Customer Feedback:

"KSTAR's energy storage solution has been a game-changer for our hotel. We have been able to significantly reduce our energy costs, and the system's flexibility has empowered us to manage energy usage efficiently. We are thoroughly impressed with the outcomes and believe KSTAR's solutions would be useful for businesses facing similar challenges."

Installers are debugging the product

Conclusion:

By implementing KSTAR's BluePulse series, the KAC50DP-BC100DE all-in-one C&I energy storage solution, Hotel Bacówka Radawa & SPA has been able to address its challenges related to energy management. The system has enabled the hotel to increase self-consumption, shave peak demand, and optimize its energy usage, resulting in significant reductions in energy costs. KSTAR's solutions demonstrate their effectiveness in helping businesses achieve sustainable energy management and reduce their reliance on the grid.

Contact Information:

KSTAR, a leading global new energy solution provider, boasts a well-established presence in key solar markets worldwide. Our expertise spans the spectrum, delivering cutting-edge PV inverters and energy storage systems featuring CATL battery solutions. Our offerings cater to residential, commercial & industrial, and large-scale utility applications. Backed by 30 years of experience in electrical and electronic technology, KSTAR is committed to generating superior new energy solutions for a diverse global clientele.

With cutting-edge energy solutions, KSTAR is ready to tailor a sustainable energy solution to fit your business needs. Take the first step towards a brighter, greener future by contacting us at marketing@kstar.com.