Management of Branch Networks for Energy Efficiency

A large branch network with over 600 locations faced significant challenges: high energy costs, inefficient processes for collecting energy data and an insufficient data foundation for sustainability reports and energy optimization. Cooling systems, lighting and climate control were among the main consumers, while peak loads and unused base loads further increased costs.

With PSsystec's IoT solution combined with an energy management system, energy consumption was made transparent across all locations, optimization potential was identified and efficiency was significantly improved – without the need for local IT infrastructure.

Key Metrics

- 600 locations
- Over 2,000 employees and partners
- One of the largest branch networks in Germany

Solutions

- Installation & Integration
- Energy Measurement and Analysis
- Process Optimization

Results

- 5-10% lower energy costs
- 40% reduction in total costs
- Improved CO2 balance

Challenge

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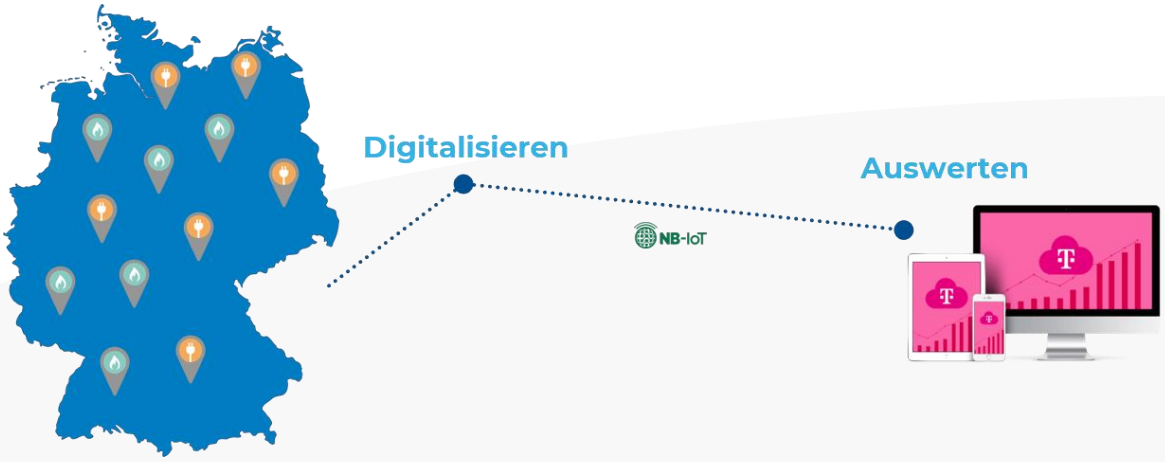
The retail company, with over 600 branches, faced the challenge of implementing an efficient energy management system for its extensive infrastructure. Most locations were rented, repurposed warehouse buildings equipped with outdated technologies. Heating systems such as district heating or gas, as well as energy-intensive equipment like cooling and climate control systems, were among the main consumers.

The lack of transparency in energy consumption and the insufficient data foundation made it difficult to identify inefficient consumers and unnecessary peak loads. This not only led to rising energy costs but also significantly impacted the company's CO_2 balance. At the same time, compliance with ESG and CSRD reporting requirements was necessary. However, due to the outdated infrastructure and rental agreements, the implementation of a unified IT solution was not feasible. The client required a flexible, scalable and easy-to-implement solution to sustainably improve energy efficiency.

With a network of over 2,000 employees and trading partners, it was crucial to find a solution that could be implemented with minimal training effort while ensuring high availability. Only in this way could the supply for customers in one of Germany's largest branch networks continue to be secured.



Solution and Technical Implementation

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Installation and Integration

The IoT-based energy monitoring system by PSsystec was implemented without local IT integration or operational disruptions. Existing meters and consumption sensors were retrofitted within just two hours per location using non-invasive sensor technology. The plug-and-play installation required neither IT specialists nor complex configurations. The integrated wireless network (868 MHz) securely transmits data to Deutsche Telekom's PSA-certified Cloud of Things platform.

BLE beacons complemented the system by providing temperature monitoring in sales areas, storage rooms and checkout zones to ensure workplace safety and optimal storage conditions.

Energy Measurement and Optimization

The sensors continuously record load profiles for electricity, gas, water, heat and temperature, transmitting them securely in real time to the cloud platform. There, the data is analyzed to identify inefficient consumers, peak loads and unnecessary base loads, such as continuously running climate control systems.

In addition to certification for EN50001 and compliance with ESG and CSRD reporting requirements, a 30% reduction in operating costs was achieved by implementing a control logic adapted to operating hours for major consumers such as climate and lighting systems.

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IoT Energymonitor

Efficient Energy Management for Branch Networks

- Secure live data on all energy flows enables precise monitoring and optimization – without local IT infrastructure.

Optimize Energy Consumption and Sustainability

- Through load profile analyses and the identification of energy-intensive consumers, peak loads can be avoided, and sustainability goals according to EN ISO 50001 can be achieved.

Seamless Installation and Retrofit Integration

- The non-invasive sensor technology enables plug-and-play installation without operational disruptions. Existing meters are integrated via manufacturer-independent interfaces.

Cost Efficiency and Funding Opportunities

- BAFA (Federal Office for Economic Affairs and Export Control) funding eligibility reduces investment costs, while optimized energy usage enables savings of up to 30%.

Your contact person

for Optimization of Energy Consumption

Horst Lange

sales@pssystec.com

+49 821 - 31 972 40 0

Datasheet

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