TEKTELIC
c o m m u n i c a t i o n s

USE CASE

TEKTELIC And DS Energy Collaboration For Energy Management

Real-time energy consumption data is a critical metric for a successful energy management program. The information must be collected, organized, and reviewed to make informed decisions about operation processes and services provided. This is equally important for commercial and residential buildings, public service providers, and industrial organizations with multiple operations.

The data on energy usage can help companies determine where to make improvements to cut energy use. Moreover, detailed knowledge about power consumption can help organizations to make better and more informed decisions about future energy needs.

Using the right information in the right way can increase efficiency and save money. In order to ensure energy efficiency, it might be necessary to partner with a company that specializes in energy management data collection. At that point, the implementation of the Internet of Things as a promising technology can lead to a significant decrease in energy consumption and related costs.

- **Challenge:** Energy management solutions for effective power monitoring
- **Products used:** KONA Micro and KONA Macro gateways

- **Company:** DS Energy
- **Country:** Denmark

CHALLENGE

DS Energy is a provider of energy management solutions with a wide variety of clients in different sectors and on different scales. DS Energy manages more than 20.000 measuring points for clients, providing them with a communication network and technologies necessary for effective power monitoring.

The main clients of DS Energy are from the following industries:

Production (heavy industry, manufacturing, food production)

Commercial buildings (offices, logistics, retail)

Services (schools, IT companies, leisure providers)

Residential (rental apartments and houses)

High energy costs and a lack of monitoring equipment are detrimental to businesses, smart cities, and industrial stakeholders. Industrial companies with high-consumption machinery face significant cost increases, impacting production, power allocation, decision-making, and sustainability. The rising electricity costs and device proliferation make low power consumption essential. DS Energy regularly encounters these challenges in the industry and seeks to address them. **The demand for efficient energy management is growing, posing challenges such as energy wastage, unplanned maintenance, and faulty equipment.** Existing energy management systems are often inefficient, with incorrect settings requiring frequent manual intervention. Equipment failures necessitate complex scheduling and repairs. To overcome these issues, smart energy solutions have emerged, minimizing errors and providing real-time energy consumption data to end-users.
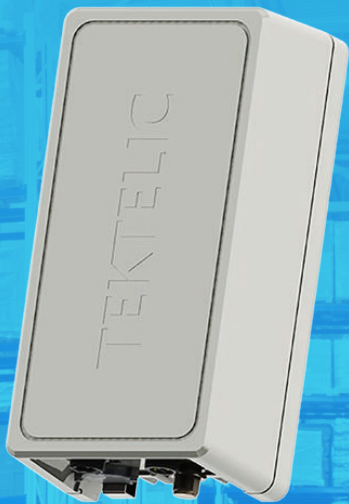
SOLUTION

The most effective solution to address these challenges is analyzing energy data using a smart LoRaWAN® system. DS Energy, as a communication provider, offers a stable LoRaWAN® network with TEKTELIC gateway technology to save costs and reduce power consumption for industrial clients during their transition to green practices.

With LoRa technology and TEKTELIC gateways, DS Energy can collect data from multiple installations and machines at customer locations, enabling optimization of energy consumption. They gather data on electrical energy, gas, heating, water, temperature, humidity, airflow, and other energy-related parameters.

TEKTELIC's KONA Micro IoT Gateway provides excellent communication performance in dense networks and has a battery backup of up to 4 hours. It is suitable for applications in smart homes, production, retail, and commercial buildings, covering over a hundred LoRa devices.

For larger areas, the KONA Macro IoT Gateway offers outdoor deployment options. It has a rugged IP67 enclosure and integrated band-pass filter to resist interference from paging and cellular networks. The gateway maintains long-range transmission capabilities and low power usage, making it easily integratable into any LoRaWAN® solution.

**KONA Macro Gateway**

KONA Micro Gateway

DOWN TO THE REAL NUMBERS

DS Energy, in partnership with TEKTELIC, offers a low-cost energy management solution that provides frequent and reliable data. Their solution includes visualizations, alarms, comparisons, analysis, reports, and data export. Implementing their Energy Management System (EMS) with LoRaWAN® connectivity and smart sensors typically leads to consumption savings of 10-20% in operational locations.

An illustrative example is an industrial de-greasing facility that discovered through LoRaWAN® monitoring technologies that a machine was constantly in a "ready-to-operate" state, resulting in significant costs of approximately 150 euros per day. After analysis, the company implemented a stop procedure during weekends when the machine was not in use, resulting in a restructuring of operations. This led to running all processes within a 4-hour window and turning off the machine for energy savings. **As a result, power usage decreased by 90,000 kWh per year, resulting in approximately 38,000 euros of annual savings.** This case highlights the value of IoT applications for businesses.

Consumption September 2022
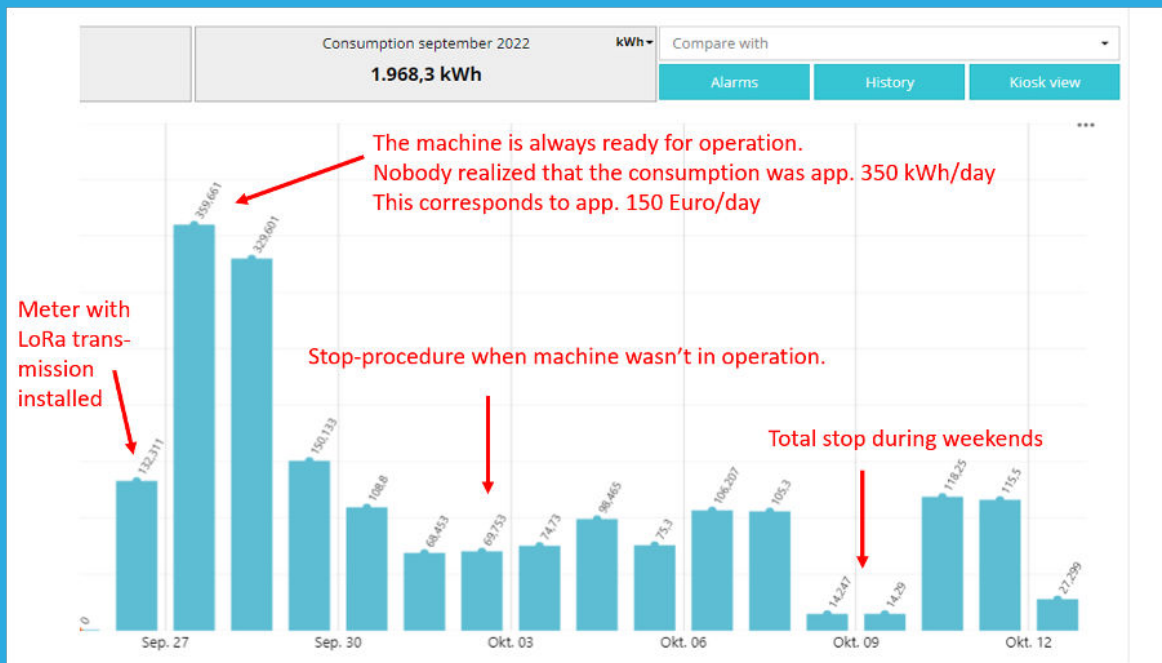
CONCLUSION

In the past, building owners and industrial operators had to rely on analog meter readings to make energy management decisions. However, advances in technology have introduced new ways to monitor energy use, including smart meters and wireless sensor networks. This removes the guesswork and uncertainty involved in making decisions about energy consumption. Besides, real-time data provided helps companies save significant amounts of money.

A successful partnership between TEKTELIC and DS Energy has proved that by implementing wireless LoRa networks, industrial customers have access to data in production at attractive prices and with customized bandwidth settings.

This means that more machinery can be monitored and more savings can be harvested using LoRa nodes. For DS Energy this means that an attractive market opportunity can be exploited without huge investments for the customers. For TEKTELIC it is more proof that the LoRaWAN® system can help individual companies and the world with energy management.

Contact us at **info@tektelic.com** to learn more about environment monitoring solutions!