Energy Efficiency Across Hotels 2023

Australia

Climate Change Response
Providing Sustainable Solutions

CASE STUDY – Hospitality Industry

Agenda

The primary objective of this project was to enhance operational efficiency across a network of hotels, leading to substantial reductions in utility expenses. Simultaneously, the project aimed to optimize the use of renewable energy sources within these establishments.

To achieve these goals and improve overall performance, the project included the adoption of an advanced Energy Management System (EMS) developed by CCR.

Overview

Aim

To deploy a smart energy management system for efficient monitoring and control of energy within the chosen hotels, with the aim of optimizing consumption and reducing costs.

Challenge

- Absence of a suitable energy management system and framework
- Uncontrolled energy usage
- Limited understanding of energy consumption patterns across different hotel areas

Solution

- Development and installation of an Energy Management System (EMS), delivering real-time data monitoring and proactive energy management.
- Establishment of consumption thresholds.
- Integration of predictive maintenance and intelligent anomaly detection alerts.
- Enhanced transparency in billing.
- Incorporation and management of Distributed Energy Resources (DER).
- Potential for future monitoring of other essential parameters using the EMS.

Climate Change Response

Multiple Hotels	**Energy** Consumption Reduced by 15%
Reduced Downtime	**Significant** Cost Saving

Network

Modbus, Bacnet, 4GLte, LoRa, LoRaWAN, Ble

Challenges

1. Lack of Real-time Energy Monitoring and Control in Hotels: The hotels did not have a comprehensive system or infrastructure in place to oversee and control energy-related data and processes in real time.

2. Lack of transparency in energy costs at hotels: The hotels had no insight into their energy expenditures. Elevated energy bills could arise from inefficiencies or wastage, potentially impacting overall profitability.

3. Limited Understanding of Energy Usage Patterns in Hotels: Individual equipment energy usage data was unavailable. A lack of information regarding the energy consumption of specific equipment within the hotels hindered their ability to optimize usage and reduce consumption effectively.

Solution

As an integral part of our solution, CCR introduced a cutting-edge Energy Management System (EMS) tailored to address the unique challenges faced by our partner hotels. This EMS boasts a range of distinctive features:

1. Continuous Energy Monitoring and Optimization: Our EMS provides round-the-clock energy monitoring and precise control, enabling hotels to stay on top of their energy consumption in real time.

2. Proactive Maintenance and Anomaly Detection: Through predictive maintenance capabilities and early anomaly detection, our system helps hotels reduce downtime and cut maintenance costs, ensuring a seamless guest experience.

3. In-depth Asset-Specific Energy Analysis: Our system empowers hotel managers with the ability to delve deep into energy consumption patterns, asset by asset. This insight allows for targeted optimization efforts, enhancing operational efficiency.

4. Transparent Energy Cost Reporting: We offer transparent and easily understandable energy cost reports, equipping hotels with the knowledge they need to make informed decisions that minimize expenses without compromising service quality.

5. Efficient Tenant Billing: Our EMS streamlines the tenant billing process, simplifying calculations and ensuring accuracy, thereby fostering transparent communication between hotel management and tenants.

6. Seamless DER Integration: Our system seamlessly integrates Distributed Energy Resources (DER), making it effortless for hotels to incorporate renewable energy sources into their energy management strategy. This not only simplifies energy operations but also bolsters sustainability efforts, aligning hotels with eco-conscious practices.

Execution

To achieve the project's objectives, we embarked on the installation of a cutting-edge, end-to-end energy management system within the hotels. This collaborative effort involved working closely with local electricians, under the watchful supervision of our dedicated CCR project engineers.

The system we installed featured a Multiprotocol Edge Device (MED) as its centerpiece. This versatile MED was responsible for the seamless gathering, processing, and transmission of data to the cloud, where it would undergo in-depth analysis and be made accessible through CCR's advanced dashboard.

This implementation ensured that all vital components within the hotels were granted real-time accessibility, providing a holistic and highly efficient approach to energy management.

Results Delivered

1. Reduced peak-hour energy consumption led to a noticeable decrease in overall usage, bolstering both sustainability and cost-effectiveness.

2. Swift detection and resolution of unexpected energy spikes ensured uninterrupted hotel operations, enhancing guest satisfaction and comfort.

3. Utilized AI-driven Predictive Maintenance to identify and address equipment issues before they caused failures, preserving a seamless guest experience.

4. Improved power quality monitoring, including the analysis of harmonics, voltage drops, and spikes, ensured a consistent and reliable power supply for sensitive appliances, further enhancing visitor comfort.

5. Provided actionable insights for efficient energy management, benefiting both cost control and guest satisfaction.

6. Multi-parametric analysis to offer a comprehensive understanding of energy consumption patterns and optimization opportunities.

7. Transparency into hotels' consumption costs and billing, fostering trust and facilitating efficient billing.

Impact and Key Takeaway

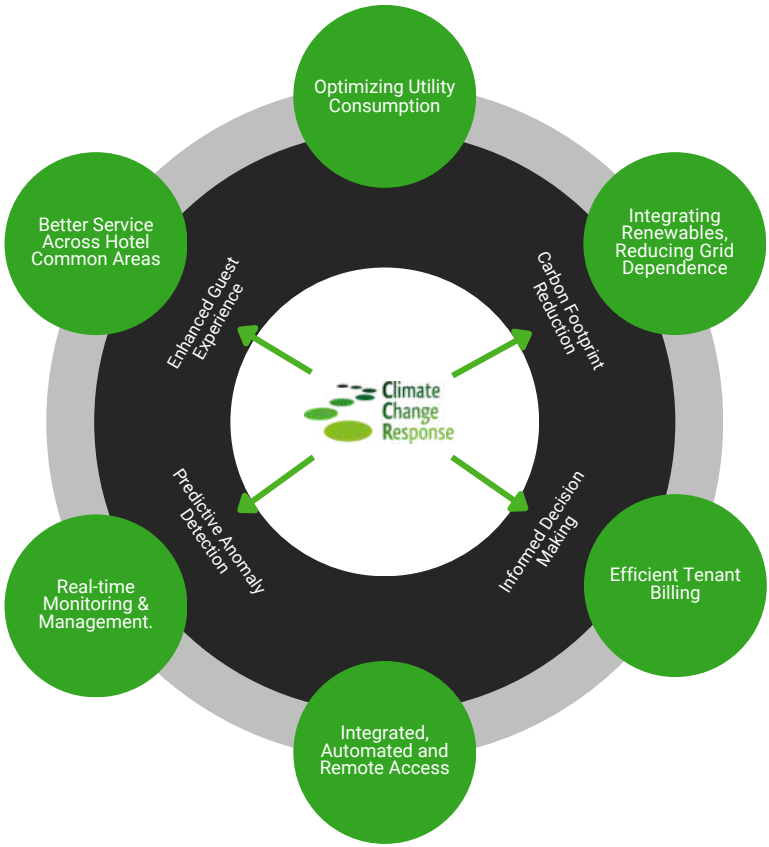
- Collaborating with CCR for energy efficiency has brought about a transformative change for the hotels, thanks to the implementation of the Energy Management System (EMS).

- Cost Savings and Sustainability: The EMS, with its automation and predictive maintenance, has led to substantial reductions in energy consumption and costs, aligning perfectly with sustainability goals and promoting cost-effectiveness.

This initiative exemplifies responsible corporate citizenship, showcasing the positive impact that businesses can have on their financial performance and the environment by prioritizing energy efficiency.

Future Scope:

The future of this project holds promising opportunities for expansion and innovation. The EMS system's versatility transcends energy monitoring, with potential applications in indoor air quality management, temperature control, ambience enhancement, visitor comfort, security, and even smart parking within the hotels. This diversification enhances its value to our establishments and opens doors to innovative possibilities on the horizon.



Testimonials

Hotel Manager: *Garden Suites**
"CCR's system with predictive maintenance is like having a guardian angel for our hotel. No more surprise breakdowns and our guests love it!"

Resort Manager: *Seaside Resort**
"CCR's energy management solution made our billing a breeze and helped us save big on energy. We're proud to be greener and richer."

*Name Changed for Confidentiality