ECOENERGY
INSIGHTS

A chain of hypermarkets in South Asia improved customer comfort and equipment operations through predictive maintenance.
The retailer reduced operating expenses in both maintenance and energy consumption and improved food storage compliance.

The Client

A successful and rapidly growing chain of hypermarkets in South Asia. As of 2021, this retail chain has stores across 263 locations in India. Each store is approximately 34,000 sq. ft. in size, with various equipment and systems such as HVAC equipment, Fire Fighting Systems, Server rooms, Un-interrupted Power Supply (UPS) Systems, Diesel Generators (DG) and Utility Supply Systems.

The Challenge

The retailer places a strong emphasis on excellence in customer experience, equipment uptime and efficiency.

The retailer wanted to:
1) improve occupant comfort through high equipment availability while at the same time being energy efficient

2) standardize operations across the store network through automation and make them less cost-intensive. Cost-intensive equipment operations (DG Testing, HVAC Operation, Fire Fighting System Operation and Testing) for higher visibility into store operations.

3) monitor food compliance of refrigeration equipment

Overall, digitalization would help drive enterprise-level decision making in areas of compliance management, managing field teams and capital planning.

The retailer engaged EcoEnergy Insights to achieve these objectives. The key challenge was to design a cost-effective solution with the right instrumentation for retrofitting, without impacting the aesthetics of the stores. The stores also required implementing solutions to detect equipment-specific problems early, digitizing electric line diagrams, firefighting systems, and procedures of testing, by thoroughly understanding the various store-specific operations.

The Solution

EcoEnergy Insights deployed multiple services to drive operational transformation for the retailer at the enterprise level. The team aimed to solve the retailer's challenges by identifying potential equipment failures early, operating all equipment at an optimal level of productivity and then standardizing and continuously improving daily operations through predictions.

The solution utilized the CORTIX™ AI and IoT platform to identify opportunities to improve operations, equipment health, maintenance practices and reduce energy costs. A team of experts liaised with the retailer's technical team to understand the store equipment and operations. Data was collected from the store equipment like HVAC, lighting, refrigeration, other infrastructure and several miscellaneous loads across sites. This data was fed to the CORTIX platform, which in turn provided Proactive Actionable Insights with predictions and clear prescriptive recommendations on the necessary actions to be taken. This helped accelerate the adoption of Predictive maintenance practices.

Throughout this engagement, store managers were preemptively supported by the BluEdge™ Command Center of EcoEnergy Insights to manage operations and equipment. The Command Center, a team of domain experts and data scientists, consolidated the requisite interventions, defined action plans, and ensured their completion promptly.

The program resulted in the following benefits for the retail store operations:

1. **Improved equipment health and lower maintenance cost**
The total cost of ownership was reduced through upgrading the maintenance process with data-enabled predictive maintenance insights and improving the effectiveness of field maintenance. Maintenance opportunities were identified by the CORTIX platform. These were proactively resolved remotely where possible, to reduce the number of site dispatches and the need for emergency dispatchers. Where required, field visits were coordinated and the effectiveness of such visits was evaluated through equipment performance analysis by the CORTIX platform, before and after the visit.

2. **Effective food safety compliance management**
Temperature compliance of refrigeration cases was actively analyzed, and indicators of non-compliance and their causes were quickly identified. Subsequent proactive steps were taken to ensure food safety and lower wastage. As a result, food loss was reduced through policy adherence for walk-in coolers and conditioned preparation rooms.

3. **A boost in operational efficiency**
The retailer was able to achieve significant energy savings through effective management of lighting and HVAC schedules by optimizing HVAC performance and dehumidifier operations, recording and reporting case temperatures electronically, as well as monitoring refrigeration equipment door status. Further, the equipment performance was enhanced through recommended optimization of defrost cycles, detecting refrigerant leaks and fixing compressor efficiency issues.

The Result

The program enabled the retailer to adopt predictive maintenance. It standardized the way the retailer managed equipment operations across 225 stores. The increase in equipment uptime, improved temperature compliance and better maintenance practices enabled providing a great in-store experience for customers while being energy efficient.

Key results :

• **98% uptime of facility equipment – HVAC, Refrigeration & Lighting**

• **50% reduction in monthly maintenance visits per store**

• **23% reduction in energy wastage incidents**

• **Over 25% reduction in the number of Predictive insights reported per month per store**

• **16%-20% improvement in food safety compliance**

• **13% improvement in temperature on customer comfort**

Additional benefits include improved food safety, humidity, defrost schedule, sales area and storage compliance. The retailer also benefited from reduced unoccupied period load and dynamic load, success in demand response management, savings from peak demand curtailment and operational improvement.

The stores of the retail enterprise-level support the local communities, as they operated as an essential service during the periods of lockdown enforced in response to the pandemic, without having to rely heavily on technicians and store personnel to operate the stores.

Write to us at **info.ecoenergy@carrier.com** and elevate your business now.

About EcoEnergy Insights - EcoEnergy Insights is a global leader in providing AI and IoT solutions for building and equipment operations. Their CORTIX platform collects data from multiple sources, analyzes it, acts on defined deviations autonomously and offers predictive actionable insights and prescriptive recommendations. The award-winning platform, combined with expert human analytics, has been delivering industry- leading outcomes in comfort, maintenance and energy efficiency across industries such as retail, hospitality and banking. EcoEnergy Insights is a part of Carrier, the leading global provider of healthy, safe, sustainable and intelligent building and cold chain solutions.

For more information on EcoEnergy Insights and the CORTIX platform, visit www.ecoenergyinsights.com and www.cortix.ai.