ECOENERGY
INSIGHTS

A Chain of Supermarkets Enhanced Customer Comfort and Optimized Equipment Operations with Predictive Maintenance.

The retailer reduced energy and maintenance operating expenses and improved food storage compliance.

The Client

A growing chain of supermarkets in India with over 320 stores across the country. The average store area is approximately 20,000 sq. ft., with various equipment and systems such as HVAC equipment, Fire Fighting Systems, Server rooms, Uninterrupted 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 in 2016 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.

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 predictive actionable insights and clear prescriptive recommendations on the necessary actions to be taken. This helped accelerate the adoption of predictive maintenance practices.
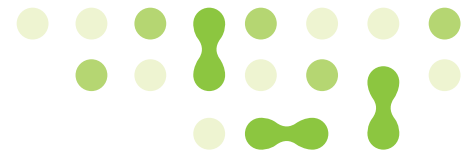
Throughout this engagement, store managers were proactively supported by a BluEdge™ Command Center of EcoEnergy Insights, to manage equipment operations. The BluEdge Command Center, consisting of teams of domain experts and data scientists, consolidated the requisite interventions, defined action plans, and ensured their timely completion.

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. Optimization 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 dispatches.

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 increase operational efficiency through addressing cooling issues (both under-cooling and over-cooling), proactively maintaining refrigeration & air-conditioning equipment and optimizing the overall energy consumption. This was done through prompt actions taken at the stores, based on the command center team raising timely worklists, providing deviation reports & monthly analytics reports.

The Result

The program enabled the retailer to adopt predictive maintenance. It standardized the way the retailer managed equipment operations across the 325 connected 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 of the program, in the year 2022 as compared to the baseline:

- **A 34% reduction in energy wastage incidents**
- **Chiller temperature compliance maintained at over 80% throughout 2022**
- **Freezer temperature compliance improved to be over 75% in the course of the year**
- **An over 80% reduction in air-conditioning undercooling instances, within the year**

Overall, refrigeration under-cooling instances were reduced, and the trading area occupant comfort compliance was improved. This helped the retailer to improve food safety compliance and also manage sales area and storage area compliance. The retailer also benefited from reduced unoccupied period energy consumption.

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for delivering excellence in Customer Service**

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About EcoEnergy Insights - EcoEnergy Insights is a leading provider of AI and IoT-enabled solutions to digitally transform building and equipment operations. Their CORTIX™ platform collects data from multiple sources, analyzes it, acts on defined deviations autonomously and offers predictive actionable insights. The platform, combined with expert human analytics, has been delivering award-winning outcomes in comfort, maintenance and energy efficiency across multiple industries such as retail, hospitality and banking. EcoEnergy Insights is a part of Carrier Global Corporation, global leader in intelligent climate and energy solutions that matter for people and our planet for generations to come.

For more information on EcoEnergy Insights and the CORTIX™ platform, visit ecoenergyinsights.com and cortix.ai. Join the conversation on LinkedIn, Twitter and Facebook. Subscribe to our YouTube channel.

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