



Transforming the HVAC equipment operations of a manufacturing plant

Improving energy efficiency and reducing maintenance costs with predictive insights from the CORTIX™ platform

The Manufacturing Plant

One of the world's leading players in heating, air conditioning and refrigeration solutions operates a large manufacturing plant in the USA, for producing their products for the residential market. This facility has been operational for over 5 decades and is spread across an area of **900,000** square feet, churning out over **1.2** million units annually.

The Challenge

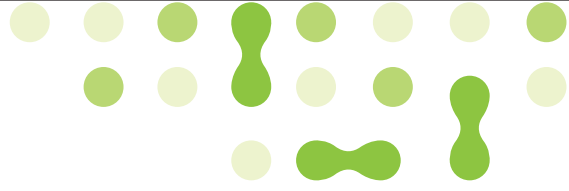
The manufacturing plant faced multiple challenges in managing its resources and maintaining operations efficiently. Firstly, the frequent breakdowns of the heating, ventilating, and air conditioning (HVAC) equipment increased operational costs as well as negatively affected occupant comfort. The difficulty in identifying issues with the equipment performance hampered the overall efficiency of the plant. Secondly, the facility struggled to meet its sustainability target of **3% reduction** in greenhouse gas emissions.

The complexity of the client's manufacturing process and the distributed layout of equipment intensified the challenge even further. In order to combat these issues, the client engaged with EcoEnergy Insights.

The Solution

EcoEnergy Insights liaised with the client's engineering team to understand the plant's operations and the team studied available data from all existing building automation and energy management systems.

Upon analyzing the data gathered from the systems, the EcoEnergy Insights team concluded that the existing systems were unable to provide visibility into the equipment performance and hence, the plant could not be actively monitored. The team then deployed the building IoT platform CORTIX™ at the manufacturing plant.



Data from all equipment and systems at the plant was fed to the platform. Upon complete integration, the platform was processing over 700,000 data records per day from over 8,200 unique data points. The platform provided actionable insights on three aspects of the equipment's performance - health, availability and efficiency. Using these insights, a team of data scientists and domain experts at the Command Center of EcoEnergy Insights discovered energy wastage scenarios and implemented over 30 HVAC controls based strategies. This helped in managing resources while adapting to a more sustainable process.

The Result

The CORTIX™ platform transformed the manufacturing plant's maintenance processes by making them proactive. The platform predicted issues that could lead to equipment failure. These issues, when attended to promptly, enabled the plant to avoid problems that typically led to equipment downtime.

A fortnightly summary of deviations and recommended improvisations were submitted to the client as 'work lists'. These work lists enabled the plant manager to avoid energy wastage. These actions were carried out either by the EcoEnergy Insights team remotely or by the client's technicians.

Besides increasing the efficiency of the plant operations, the CORTIX™ platform empowered the plant maintenance manager with critical insights on equipment performance, post a service activity. This enabled them to determine whether the issue has been correctly addressed or not, thereby ensuring the effectiveness of the maintenance activities.

Within six months of the integration with the CORTIX™ platform, the plant was able to achieve more than the targeted GHG (greenhouse gas) emission reduction.

Here's a look at the improvement in six months:-

- **5.5 %** average energy savings
- **9%** average reduction in gas consumption
- **6.3%** reduction in CO₂ emission
- **22%** improvement in thermal compliance

"EcoEnergy Insights has helped us in optimizing our operations cost for the plant's HVAC equipment. Predictive insights from the CORTIX™ platform have not only helped us achieve our sustainability goals but also addressed possible equipment failure issues before they even happen. The team has been supportive and proactive through this process and we have seen the benefits of all recommendations made, in such a short period of time. We look to continue our good work with them".

Maintenance Manager



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

About EcoEnergy Insights - EcoEnergy Insights is a leading provider of outcome-based services to some of the world's largest enterprises in industries such as restaurants, retail, hospitality, banking and water utilities. Its CORTIX™ technology platform leverages a combination of advanced software and expert human analytics to uncover insights and use them to achieve results across sites, multiple industries and a range of geographies. EcoEnergy Insights is a part of Carrier, a leading global provider of innovative HVAC, refrigeration, fire, security and building automation technologies.

© EcoEnergy Insights 2020

