ECOENERGY
INSIGHTS

A leading residential HVAC equipment manufacturer reduced the carbon footprint at a large manufacturing facility by over 5%.

The manufacturer implemented predictive insights to improve operations and maintenance.

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The Client	One of the world leaders in heating, air conditioning and refrigeration solutions. The company operates a large manufacturing facility in Mexico. This facility has been operational for over 10 years and is spread across an area of 385,000 square feet, producing over 60,000 units annually.
The Challenge	The manufacturer was looking to optimize its facility equipment operations to reduce carbon footprint and energy intensity in addition to enhancing equipment reliability. Low visibility of equipment operations resulted in unplanned downtime and the recurrence of frequent breakdown maintenance, which resulted in excessive wear and tear of critical parts, further reducing equipment life. The manufacturer also wanted to leverage new age technologies like Internet of Things (IoT) and Artificial Intelligence (AI) to reduce carbon footprint and gain better visibility of equipment operations. To achieve these objectives, the HVAC equipment manufacturer engaged with EcoEnergy Insights.
The Solution	EcoEnergy Insights deployed an AI based solution to reduce carbon footprint, energy use intensity and improve equipment reliability. The solution leverages the CORTIX™ AI platform, which constantly monitors & analyzes facility equipment, predicts equipment issues and offers insights and prescriptive recommendations. By collecting and analyzing data continuously from the connected equipment, the platform identified changes in equipment behavior using a vast repository of equipment scenarios. It then provided appropriate recommendations in natural language, using its AI Assistant for facility equipment, to correct issues and prevent them from manifesting into more serious problems.
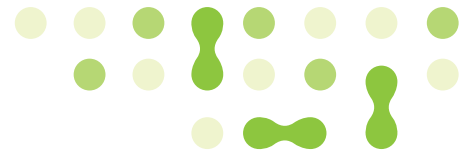
First, the manufacturing plant was onboarded onto the CORTIX platform. This involved integrating various HVAC, Lighting and other equipment inside the facility that were connected to existing Building Management Systems (BMS). This created an intelligent network of connected infrastructure.

EcoEnergy Insights deployed a connector software at the Building Management System and the facility's Energy Management System to gather data from the connected equipment. The platform collected data at 15 minutes intervals and then stored it in the cloud. After the creation of a provisioning model, the data flow was established between the facility and the CORTIX platform. Then the platform would detect issues, patterns in data and then depict them for better visibility and provide actionable insights to optimize operations.

The insights and recommendations from the platform were prioritized and converted into a periodic report and comprehensive worklist by an expert advisory team from our BluEdge™ Command Center. Our experts used predictive actionable insights from the platform to define action plans and ensure they were implemented promptly.

The combination of the CORTIX platform and the advisory experts helped in making the facility operations more proactive and efficient, leading to continuous savings and operational improvements.

The Result

This engagement enabled the manufacturer to achieve the following results in their plant in 2021:

- Energy savings of over 9% for HVAC equipment
- Energy savings of over 5% for the entire facility
- Greenhouse gas emissions reduced by 300 metric tons CO_2 equivalent*

All this was achieved with a less than 24-month payback on the investment into the program.

Here is what the maintenance head had to say:
"EcoEnergy Insights enabled us to change the way we operate the plant's HVAC equipment in a short span of time. The predictive actionable insights from the CORTIX platform have a wealth of information and the proactive team at the command center helps us address problems in a timely manner. Making our plant operations more environment-friendly while giving us a good return on investment ticks all the boxes in terms of what we were looking to achieve."

Note: Emission Reduction refers to the approximate units of carbon dioxide emission avoided as a result of reduction in energy (electrical) usage under Scope 2 of GHG emission reduction. The calculation uses U.S. national weighted average CO_2 marginal emission rate to convert reductions of kilowatt-hours into avoided units of carbon dioxide emissions, i.e. $7.09 \times 10\text{-}4$ metric tons CO_2/kWh X Adjusted Energy Savings

Reach out to us at **info.ecoenergy@carrier.com** for more.

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. 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, 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