

# Building Manufacturer Reduces Energy Usage by \$183,000 and Greenhouse Gases by over 2,000 Metric Tons Annually by Optimizing Their Compressed Air System



## BACKGROUND

A Midwestern manufacturer of building materials had a stringent corporate goal of reducing their carbon footprint by 15% between 2019 and 2025. As of 2021, they were falling well-short of their goal. They realized that they would have to step up the pace and identify larger opportunities to reduce energy in order to have a significant impact on greenhouse gas emissions. In addition, raw materials shortages and supply chain issues were causing unexpected cost increases at the plant level, significantly eroding margins.

The facility was spending approximately \$3 million annually on electricity used to run their compressed air system. Plant personnel had significant frustrations with poor data visibility and inaccuracies in the data provided by their air compressor monitoring system. The existing controller did not have the capability of load sharing or dynamic control, leaving much of the work to be done manually. In the absence of accurate, easy-to-access data, they

were unable to draw valuable insights that would help them to make important and impactful decisions. They knew their compressors were running inefficiently and regularly generating more air than necessary, leading to excessive blowoff and wasted energy, but didn't know how to rectify the issue.

## SOLUTION

Nalco Water introduced Ecoplant 360, a machine learning compressed air monitoring and control network that optimizes utility operation to help achieve peak efficiency of compressed air generation. This is one more tool the facility uses to achieve their overall sustainability goals. The Ecoplant team collaborated with the Nalco Water team and the customer to conduct a product demo and discovery call which then led to a site assessment by the Ecoplant team.

Upon completion of the initial site assessment, both the Nalco Water and Ecoplant teams worked with the customer to ensure that the solution addressed their needs and concerns. Of particular importance to the customer was increased data visibility, reduced

## ANNUAL SAVINGS



ENERGY

Average monthly savings:

**246,052 kWh**  
**= \$15,255**

Estimated 12-month savings:

**2,952,628 kWh**  
**= \$183,063**



GREENHOUSE  
GASES

**2,088**

metric tons of CO<sub>2</sub> emissions  
saved annually

## VALUE DELIVERED

**\$183,063**  
**ANNUALLY**

maintenance costs, system alerts with actionable insights, and significant energy savings. The team discussed and agreed to a quick installation and integration timeline. As soon as the PO was issued, the Ecoplant team was able to be onsite within two weeks and completed the installation in just two days with no interruptions to production!

Once the system was connected, the customer was able to see the value of the Ecoplant 360 solution immediately. After completing the baseline period over the course of three weeks, the Ecoplant team activated the dynamic control and the results were evident the very next day!



## RESULTS

In just the first week of Ecoplant dynamic control, the customer already began to realize significant savings. In addition to the savings, the customer was very pleased with the visibility of data and the actionable insights provided by the Ecoplant 360 solution and team of expert advisors.

The customer is also looking forward to adding more data points and sensors on the production floor to gain even more insight and understanding of the compressed air process. These additional data points will provide value in not only increased energy savings but also being able to better understand the correlation between compressed air system efficiency and production output.

In just over 3 months of operation, the Ecoplant dynamic engine has provided approximately 6% savings over baseline, resulting in the following financial savings:

- Average Monthly Savings:  
246,052 kWh = \$15,255
- Estimated 12-Month Savings:  
2,952,628 kWh = \$183,063

The savings have already funded the subscription, directly impacting the customer's bottom line in a positive way. This kW reduction has also helped the customer make a significant gain in their CO<sub>2</sub> emissions goals by reducing the CO<sub>2</sub> output by a projected 2,088 metric tons over the next 12 months! And the amount of time compressors spent exhausting air to the atmosphere was reduced by 25%, a significant reduction in blowoff waste.

*"The Ecoplant 360 solution is money well spent. In just one month of intelligently controlling the system we are seeing better than expected savings at our initial location"*

Engineering Manager

## CONCLUSION

Through the implementation of the Ecoplant 360 offering, this plant was able to increase the efficiency and reliability of their compressed air system with no capital investment. The savings realized are contributing toward helping them meet their sustainability goals. As a result of this success at this facility, the customer is already expanding this offering to additional sites.

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