



**BLUE
FRONTIER™**

CASE STUDY

Waffle House

Macon, GA

Install Date: 10-29-2024



OVERVIEW

Waffle House is an iconic restaurant chain founded on September 5, 1955 in Avondale Estates, Georgia. With more than 2,000 locations across 25 states, it serves over \$1 billion in annual revenue with more than 40,000 employees. The brand is known for its Southern comfort food, operational efficiency, and disaster resilience—even inspiring FEMA’s “Waffle House Index” to measure community impact during storms.

Waffle House looked to partner with their utility provider, Georgia Power, to find a technology that could improve indoor comfort, increase resiliency of existing equipment and reduce energy bills with better HVAC efficiency, which led them to Blue Frontier.



PROJECT GOALS

- ▶ Reduce total HVAC operating costs
- ▶ Ensure consistent comfort and business continuity
- ▶ Minimize peak demand charges through energy storage

CHALLENGE

A Waffle House location in Macon, Georgia, faced a growing operational challenge. As summer temperatures and humidity intensified, its four aging DX rooftop units could no longer maintain a comfortable environment for customers and staff. This performance decline raised significant concerns for management about its impact on sales and employee retention.

Seeking a forward-thinking solution, Waffle House, in partnership with Georgia Power, engaged Blue Frontier to address the issue.



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SOLUTION

In order to meet Waffle House's goals for improved comfort and proper ventilation, Blue Frontier installed their DOAS upstream of the existing rooftop units. With more than triple the efficiency of typical DOAS units on the market, the Blue Frontier unit conditions all the ventilation air down to a space neutral temperature and a low supply dewpoint, offsetting a significant portion of the existing equipment's cooling load. The result was drastically improved thermal comfort in the dining and kitchen even as outdoor temperatures and humidity levels soared.

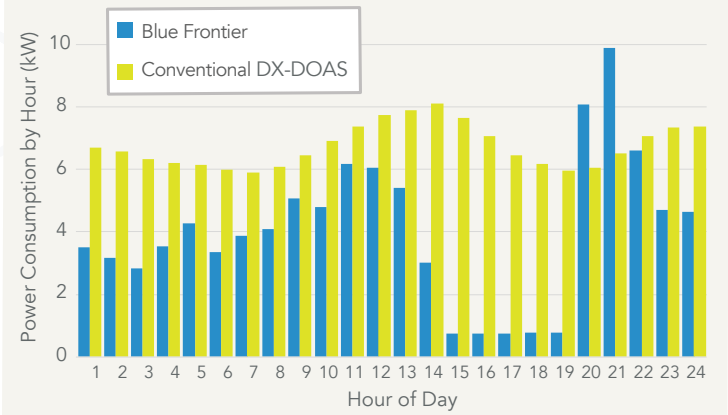
Beyond its 3X efficiency relative to typical DOAS units, the Blue Frontier system has 6-hours of thermal storage. This capability provides benefits to Waffle House, as well as Georgia Power, by cutting power down to 1.15 kW (for fans only) during the peak demand times of 2-7pm, while still delivering full 15-ton cooling capacity.

PEAK HOUR SAVINGS

During Georgia Power's peak electric window of 2 to 7 pm, the Blue Frontier unit provided its full cooling capacity while only needing to power its fans.

Fig. 1 shows that Blue Frontier unit consumed 84% less energy during that peak window compared to a typical DOAS unit on the market.

Fig. 1: Blue Frontier vs Conventional DOAS Unit
Power Consumption by Hour - Average of All Days



Waffle House BF-DOAS™ Results

Energy Savings

40%

Less electricity
daily average

Cost Savings

65%

Lower costs
per day average

Peak Power Draw

90%

Reduction in max kW
93% peak days

Daily Average
MRE Efficiency

6.61

lb/kWh
vs. 4.0 industry

Average MRE during
high electricity price periods

33.7

lb/kWh
93% peak days

Dramatic Comfort Improvement

- Dew point: From "almost never below 60°F" to "almost never above 60°F"
- Max RH: From 75-80% down to ~65% | Peak temps: From 80°F down to 75°F

*More comfortable
than ever before*
- Waffle House Staff



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