

# CASE STUDY — Global Fast-Food Chain (U.S.)

11.1% TOTAL ENERGY REDUCTION

35,468 kWh annual savings | \$5,320 saved annually | 6–12 month payback

## INTRODUCTION

A high-demand U.S. fast-food restaurant needed to reduce energy use across its refrigeration, kitchen and electrical systems. Temperature changes made consumption difficult to compare, so a validated approach was required.

The site deployed a dual optimisation strategy using FilterPro (power alignment) and enPact Refrigeration & Cooling enhancements. Savings were measured through temperature-adjusted ON/OFF comparison periods to ensure accurate results.

### SOLUTION

#### Patented enPact Technologies:

The site installed patented enPact FilterPro and patented enPact Refrigeration & Cooling technologies to reduce electrical waste and improve refrigeration efficiency.

- **FilterPro** improves power quality and lowers kWh draw
- **Refrigeration & Cooling** enhances heat exchange and reduces compressor run-time

Because the technologies act on different parts of the system, their benefits combine and amplify, delivering substantially larger savings together.

### CHALLENGE

- Continuous refrigeration demand to maintain strict food-safety temperatures
- Inefficient heat-exchange increasing compressor runtime and electrical load
- High overnight cooling demand, influenced by outside temperature
- Temperature fluctuations affecting baseline comparisons
- Requirement for transparent, validated savings before multi-site rollout
- Expected return on investment within 6–12 months

The site needed a solution that could reduce consumption across both mechanical cooling performance and electrical efficiency - without impacting operations or food preparation.

## RESULTS:

#### Whole-Site Daily Savings

- **11.1% total reduction**
- **Daily consumption reduced from 453.63 kWh → 403.25 kWh**
- **50.37 kWh/day saved**
- **35,468 kWh saved annually**
- **\$5,320 annual financial savings**

#### Operating Hours (Food Service Periods)

- **11.5% savings during core trading hours**
- **Demonstrates strong effectiveness during high cooling demand**

#### Non-Operating Hours

- **9.5% savings overnight and early morning**
- **Confirms consistent round-the-clock performance**

#### Freezer-Level Performance: Proof of Combined Technology Impact

Mode	Avg. Daily Consumption	Savings (%)
Baseline	46.98 kWh	—
FilterPro Only	40.92 kWh	12.90%
FilterPro + R&C	36.67 kWh	21.90%

#### Technology Synergy Explained:

**FilterPro alone delivered a solid 12.9% reduction, but when paired with R&C optimisation, the total savings increased to 21.9% - a 69% uplift in performance.**

### CONCLUSION

The combined FilterPro and Refrigeration & Cooling optimisation strategy delivered substantial and verified energy savings for this national fast-food restaurant.

By targeting both electrical efficiency and cooling performance, the technologies achieved an 11.1% whole-site reduction, a deeper 21.9% saving on key refrigeration assets, and a rapid payback within the expected return window.

The success provides a strong business case for chain-wide deployment across additional restaurant locations.

### ESTATE-WIDE IMPACT PROJECTION

If the same patented enPact FilterPro and Refrigeration & Cooling optimisation were applied across all 13,000 U.S. restaurant locations, the projected impact would be:

- **461 million kWh** saved annually
- **\$69 million** annual cost reduction (based on \$5,320/site)
- **11.1% average whole-site reduction** across the estate

These results demonstrate a transformational opportunity for chain-wide energy reduction and operational cost savings.

## INTERESTED IN ACHIEVING SIMILAR SAVINGS ACROSS YOUR ESTATE?

Get in touch to discuss validated energy-reduction opportunities and multi-site rollout potential.

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