



## Global Food Distribution Center



### Measured Pilot Results

- **26.5%** total reduction in refrigeration energy usage
- **101,126 kWh** saved annually based on measured performance
- Equivalent to **>219 kWh/day** saved across freezer rooms
- **58 kWh/day** saved across cold rooms
- **Sub-12-month** payback achieved

Pilot data taken across 34 days between February/March using ON/OFF comparison windows.

### Estimated Full-Year Performance

- **112,126 kWh** annual savings (full-year adjusted)
- **\$32,808** annual financial savings (@ \$0.28/kWh tariff)
- **66,335 kg** annual CO<sub>2</sub> reduction
- Expected payback: **11 months**

# Case Study

## CHALLENGE

- Extremely high refrigeration load across large freezer and cold-room estate
- Freezers operating at 68.5 kW each, with cold rooms between 15-19kW
- Rising energy consumption during warmer months (25% seasonal uplift)
- Need for transparent, M&V-validated savings before wider rollout
- Requirement for a sub-12-month payback investment approval

## SOLUTION

The site deployed our patented ElectroDensity technology, installed across all (8) cooling systems. Using AI-driven optimization to:

- Reduce compressor runtime (consuming 80-90% of refrigeration energy)
- Use superheat-based control to regulate refrigerant flow
- Increase latent cooling efficiency while maintaining setpoint temperature
- Improve system stability without modifying site operations

## CONCLUSION

The Refrigeration & Cooling optimization delivered substantial, validated reductions across this food processing site. With a **41.5% improvement** across refrigeration assets and an **11.7% reduction** on all incoming electricity, the solution far exceeded expectations and achieved results with zero operational disruption. The success of this deployment provides a clear business case for additional optimization across the rest of the client's estate.