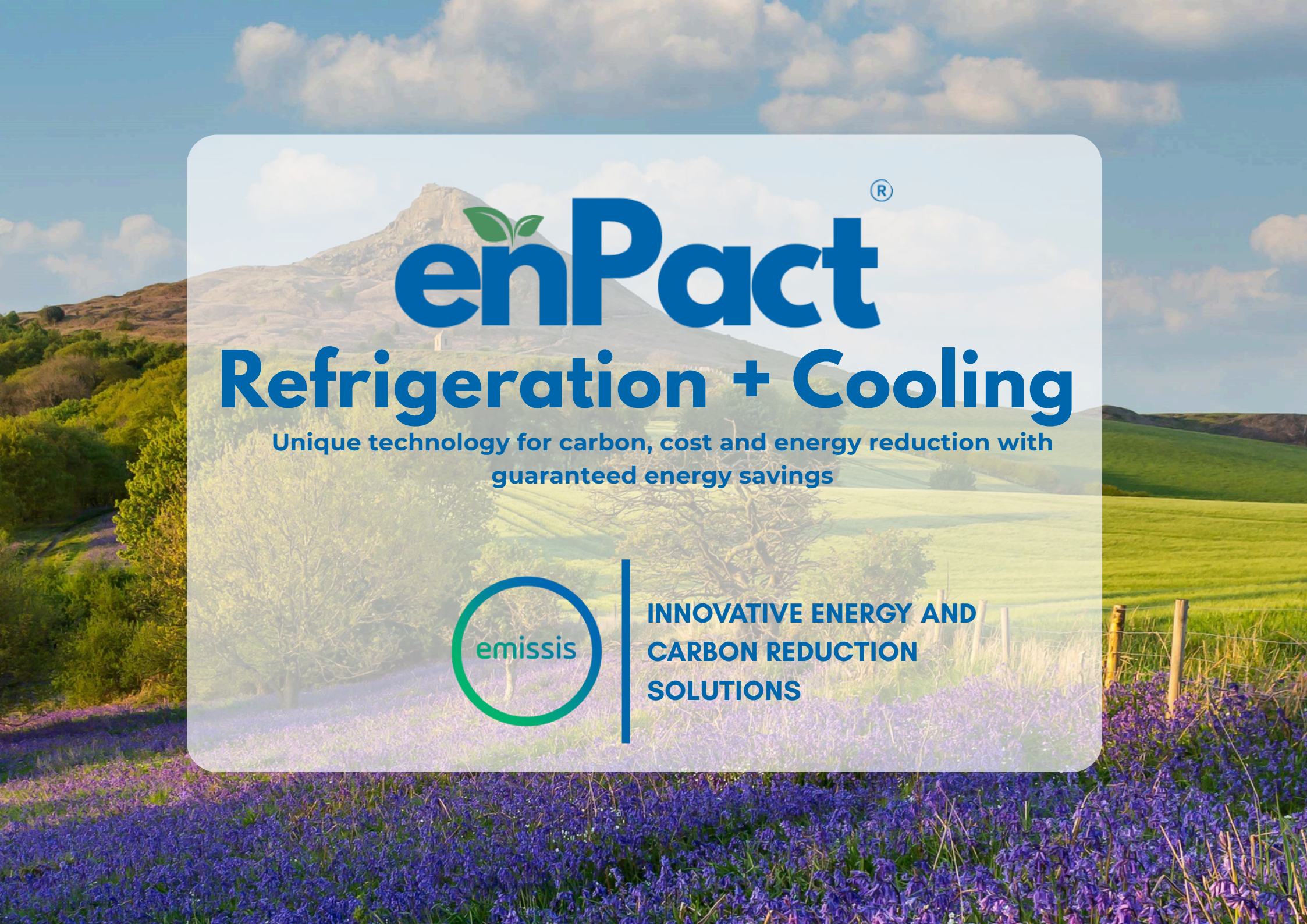

enPact®
Refrigeration + Cooling
Unique technology for carbon, cost and energy reduction with guaranteed energy savings
emissis
INNOVATIVE ENERGY AND CARBON REDUCTION SOLUTIONS

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ABOUT US

Engineering energy efficiency that pays off.

Emissis North America, LLC, based in Las Vegas, Nevada, is the U.S. subsidiary of Emissis (Electrical Mechanical & Cooling Ltd). Emissis is a specialist engineering firm with over 20 years of experience in delivering high-performance mechanical and electrical solutions. We provide independent, critical power and cooling services tailored to industrial and commercial environments across the US. Being independent means we're not tied to specific products - we choose the right technologies to meet your site's exact needs. Backed by a skilled in-house engineering team, we're known for our technical rigor, compliance expertise, and project efficiency.

Our Mission

To help clients reduce energy costs, extend asset lifespan, and accelerate carbon reduction - without disrupting operations.

Our Core Technology: enPact

We deliver a suite of globally patented energy-saving solutions under the enPact brand, designed to optimize energy use across key systems:

- enPact Refrigeration & Cooling
- enPact Chillers
- enPact Electrical Optimization
- enPact Energy & Carbon Management
- enPact Engineered Solutions

We serve a wide range of sectors including:

- Kitchens, Bars & Restaurants
- Food Retail & Production
- Heavy Industry & Manufacturing
- Hospitality & Built Environment

From initial survey through to installation, monitoring, and payback verification - we deliver full-service energy optimization that reduces cost and carbon for some of the US's most recognized businesses.



enPact® Refrigeration + Cooling

Cut refrigeration energy use by up to 40% - without compromising temperature or performance.

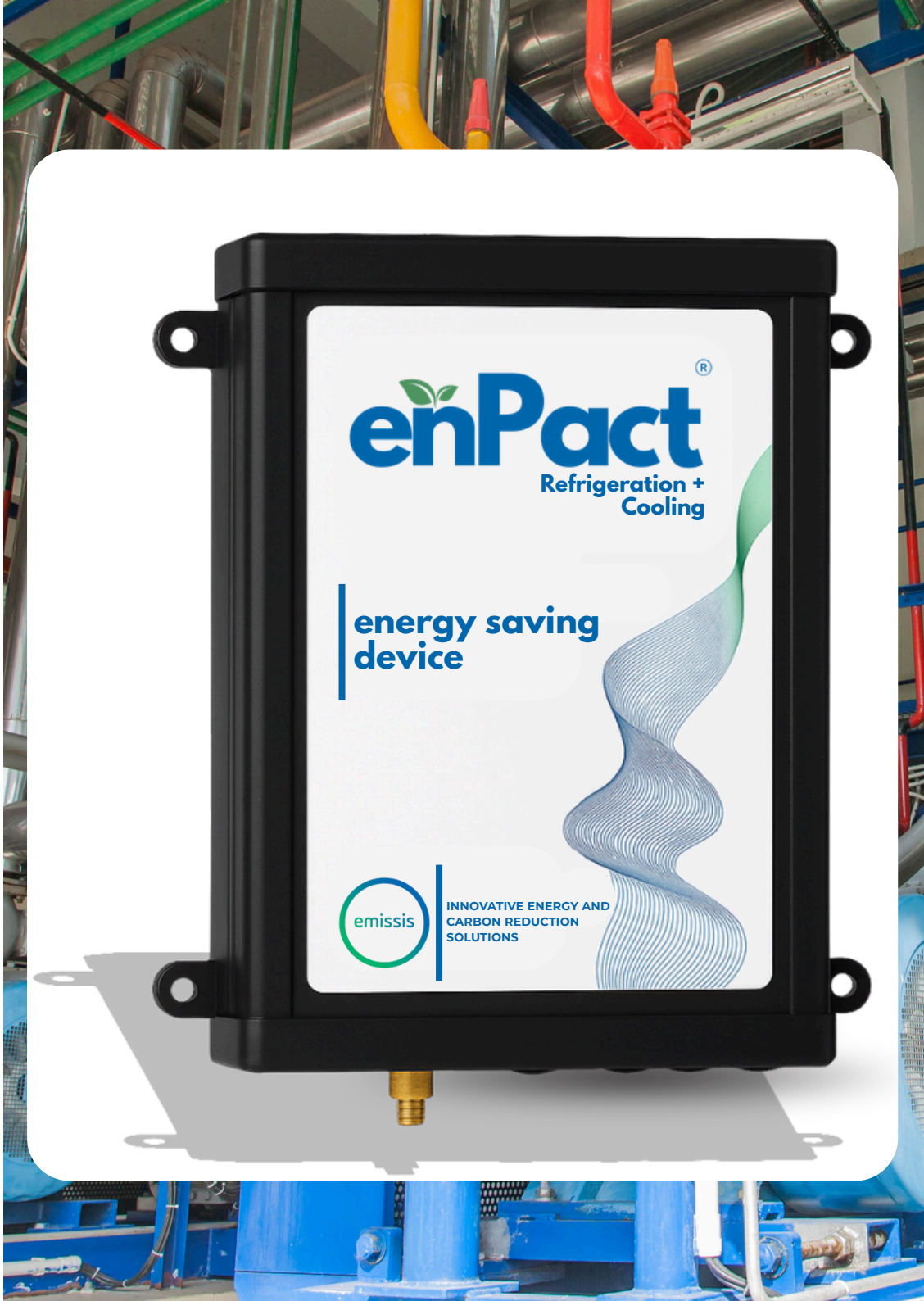
Engineered for Efficiency. Trusted for Performance.
In high-demand environments where every degree matters, enPact Refrigeration & Cooling delivers intelligent control without compromise. Whether you're managing perishable goods, sensitive equipment, or comfort-critical spaces, enPact ensures optimal conditions - while cutting energy consumption by up to 40%.

Powered by British-designed, maintenance-free technology, the enPact system integrates effortlessly into existing infrastructure and is installed with precision by certified engineers - all with minimal disruption to your operations.

What Sets enPact Apart?

- Instant, verifiable energy savings
- Remote monitoring and real-time performance insights
- Retrofit-ready design for fast, non-intrusive installation
- Proven return on investment with short payback periods

From food storage to pharma, retail to hospitality, enPact redefines how modern refrigeration and cooling systems perform - efficiently, sustainably, and without operational compromise.



enPact® Refrigeration + Cooling

From Insight to Installation: A Seamless, Engineer-Led Process

Step 1: Discovery & Initial Assessment

Step 2: Desktop Proposal & Business Case

Step 3: On-Site Technical Evaluation

Step 4: Professional Installation & Commissioning

Step 1: Discovery & Initial Assessment
We begin with a detailed discovery phase to evaluate how enPact Cooling & Refrigeration can contribute to your energy and carbon reduction targets. Using data you provide, we conduct a comprehensive desktop assessment to understand your site(s) and operational profile. This enables us to rapidly determine the feasibility and projected benefits specific to your environment.

Step 2: Desktop Proposal & Business Case
Following the assessment, we develop a tailored desktop proposal outlining the specific advantages of deploying enPact at your facility. This includes a detailed business case, complete with ROI projections, estimated energy & carbon savings, and payback timelines—all aligned with your strategic objectives.

Step 3: On-Site Technical Evaluation
As part of our "no charge, no obligation" assessment program, our engineers conduct an on-site technical evaluation to verify system compatibility and installation conditions. This physical assessment ensures enPact is configured to achieve optimal performance within your existing infrastructure.

Step 4: Professional Installation & Commissioning
Our experienced project managers and qualified engineers handle the full installation process with precision and care. From planning to commissioning, every aspect is executed according to stringent technical and safety standards, ensuring minimal disruption and maximum efficiency.

WHY CLIENTS CHOOSE enPact®:

- Up to 40% energy savings
- Zero disruption during install
- No further maintenance required
- Smart, sensor-based control
- Supports ESG and Net Zero targets



- Significant Energy Savings.
- Achieve up to 40% reduction in energy consumption by optimizing compressor operation through real-time temperature data.
- No Disruption, No Downtime.
- Non-intrusive installation - typically completed in 2 hours for AC systems and 8 to 12 hours for large refrigeration units - with no impact on existing operations.
- Fast Return on Investment.
- Typical payback period of 6 to 24 months, delivering long-term savings and contributing directly to your energy and carbon reduction goals.
- Maintenance-Free Technology.
- Designed for durability and simplicity - no ongoing maintenance required post-installation.
- Supports Sustainability Objectives.
- Reduces overall carbon emissions by limiting compressor runtime, helping meet Net Zero and ESG compliance targets.

enPact® Refrigeration + Cooling

THE BENEFITS

Engineered Efficiency. Proven Results.

enPact delivers advanced energy optimization across a wide range of cooling and refrigeration applications - without compromising temperature control or system reliability. Whether you're operating complex HVAC systems or managing cold storage for perishable goods, enPact delivers measurable performance improvements from day one.

enPact® Refrigeration + Cooling

CASE STUDIES

Case Study: National Food Retail Chain - Freezer Energy Optimization

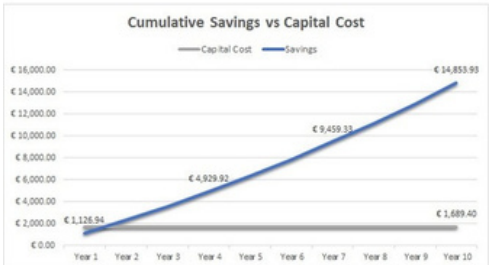
To evaluate the impact of enPact Refrigeration technology, a single enPact unit was installed on a commercial freezer at a national retail chain site in Ireland. A smart energy meter was connected to the freezer's compressor system to accurately monitor kWh consumption throughout the test.

The trial began on August 4th, 2024, and was structured over a two-week period:

- Week 1: enPact system activated
- Week 2: enPact system deactivated

This alternating approach allowed for a direct, data-driven comparison of energy performance with and without enPact optimization. The energy usage data has been collected, analyzed, and is available upon request.





Energy Reduction & Savings Forecast for 173 stores in Nationally

1 Year Savings
779,840.75k Wh
€ 194,960.19

5 Year Savings
3.8 million+ kWh
€ 974 ,000+

10 years Savings
7.7 million+ kWh
€1.9 million+





Annual Savings Based On This Pilot Consisting of one freezer:

45.57%
1,825 kWh

Carbon Saving of

€547.50

Financial Saving of

€51.465.00

Case Study: Global Fast Food Chain - Chiller System Optimisation

An enPact unit was installed on a chiller system at a high - demand fast food restaurant to evaluate its impact on energy consumption in a fast - paced food service environment. A smart meter was connected to the chiller's compressor system to ensure accurate measurement throughout the trial.

The trial began on August 28th, 2024, and followed a two-week comparative structure:

- Week 1: enPact system deactivated
- Week 2: enPact system activated

This ON/OFF testing method provided clear, measurable data on the energy savings delivered by enPact optimization. All data has been downloaded, analyzed, and is available upon request.

enPact® Refrigeration + Cooling

TECHNICAL OVERVIEW

Advanced Sensor Logic for Compressor Efficiency:

enPact is a retrofit energy optimization technology designed for direct expansion (DX) air conditioning and refrigeration systems. Installed on the indoor (evaporator) component, it enhances system performance by intelligently managing cooling efficiency and compressor runtime - without altering or replacing existing equipment.
At its core, enPact uses a multi-sensor platform and proprietary control logic to optimize the condensing unit or pack system, which accounts for 80–90% of total energy use in refrigeration systems.

How enPact Works:

1.Superheat Assessment:
enPact uses two sensors to monitor refrigerant temperature across the evaporator. When the evaporator reaches maximum cooling capacity, the system identifies optimal superheat levels.

2. Compressor Control:
enPact interrupts the power supply to the solenoid valve/electronic expansion valve, effectively stopping the compressor at peak efficiency without impacting cooling output.

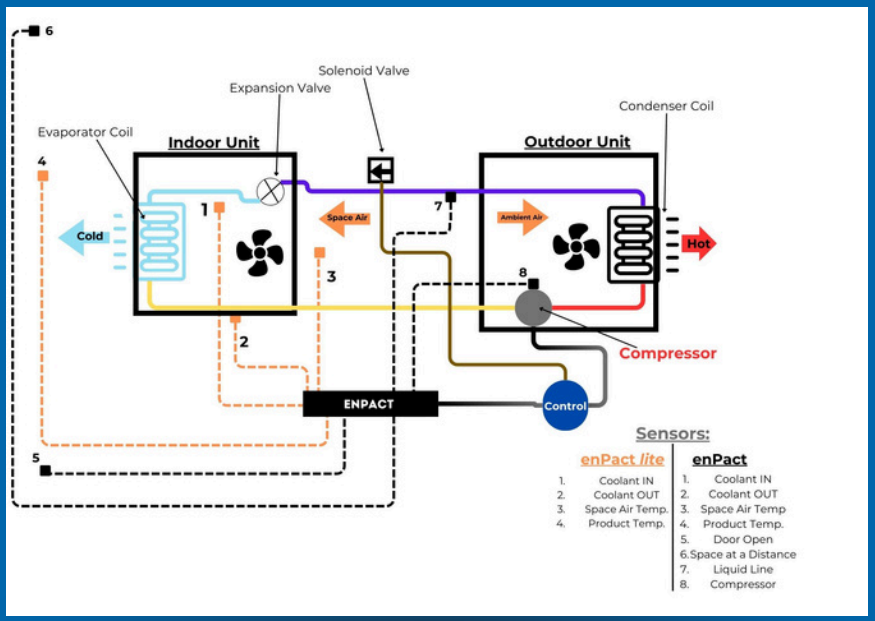
3.Refrigerant Utilization:
With the solenoid valve/electronic expansion valve closed, the remaining refrigerant in the evaporator is fully utilized. This maintains cooling while reducing compressor load.

4.Automated Re-engagement:
Once the refrigerant is depleted and superheat falls to a preset lower threshold, enPact reactivates the solenoid valve and restarts the compressor cycle.

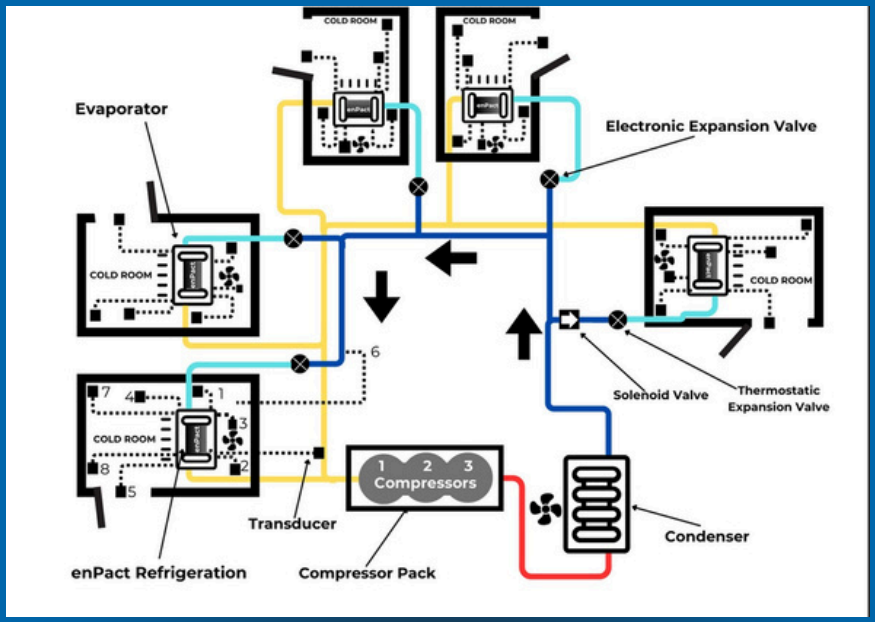
enPact stops the compressor in a single compressor-evaporator system. In a multi-pack system, enPact effectively reduces the load on the compressor pack:

- enPact maximizes latent cooling to reduce compressor workload without compromising temperature control.
- Continuously monitors superheat, space temperature, and product temperature to dynamically adjust the refrigeration cycle.
- Compatible with both thermostatic expansion valves (TEV) and electronic expansion valves (EEV).
- Typical energy savings range from 20% to over 40%, depending on the application.

Single Pack System



Multi - Pack System



Commercial HVAC Applications

- Split-Type Air Conditioners
- Compatible with wall-mounted, ceiling cassette, and packaged DX units across all sizes.
- Ducted Systems with AHUs
- Ideal for ducted commercial systems that require stable, efficient airflow control.
- VRV/VRF Systems
- Supports inverter-based multi-zone systems for precise temperature and energy management.

Industrial & Manufacturing

- Cold Storage Facilities
- Enhances efficiency in large-capacity refrigeration used for warehousing, food logistics, and pharmaceuticals.
- Food & Beverage Production
- Maintains strict temperature tolerances while reducing energy costs in chilled production areas.
- Pharmaceutical & Clean Environments
- Supports compliance and reliability in temperature-sensitive industrial processes.

Retail & Food Service

- Walk-In Refrigerators and Freezers
- Optimizes cooling load in high-turnover environments such as supermarkets and quick-service restaurants.
- Display Fridges and Cabinets
- Ensures energy-efficient operation of dairy, meat, beverage, and produce refrigeration units.
- Multi-Pack & CO_2 Refrigeration Systems
- Compatible with complex multi-circuit systems commonly found in larger retail and processing installations.

enPact® Refrigeration + Cooling APPLICATIONS

Flexible Integration Across Cooling and Refrigeration Systems:

enPact Refrigeration & Cooling is engineered for seamless retrofitting into a wide spectrum of direct expansion (DX) cooling and refrigeration systems. From commercial air conditioning to large-scale cold storage and food processing environments, enPact delivers intelligent energy optimization without disrupting operations.



✔ **Supermarkets & Retail Chains**
✔ **Hospitality & Fast-Food Restaurants**
✔ **Food & Beverage Manufacturing**
✔ **Cold Storage Warehouses**
✔ **Pharmaceutical Production**
✔ **Commercial Offices & Shopping Centers**

enPact® Energy & Carbon Management

Our EnOS platform integrates on-site operational technology with cloud-based intelligence to provide real-time energy data, along with data-driven carbon monitoring, reporting, and abatement solutions.

Energy Monitoring

- Monitor your energy consumption in real-time with our advanced IoT technology.
- Identify energy conservation measures utilizing the capabilities of artificial intelligence.
- Receive alerts in the event of overconsumption in any of your showrooms.

Carbon Reporting

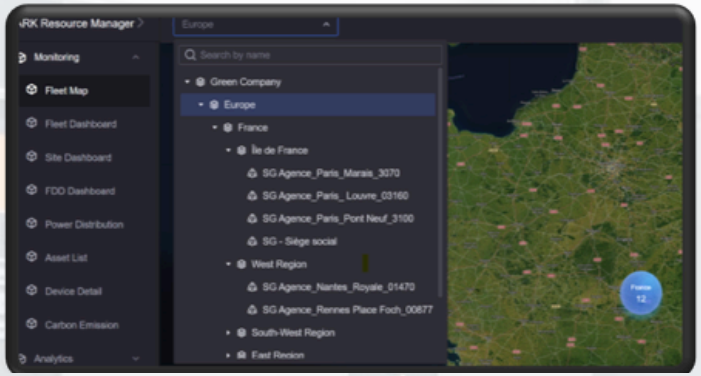
- Utilize real-time data to assess, benchmark, and report CO2 emissions both at individual sites and across the entire portfolio.
- Strategically plan and prioritize abatement initiatives based on these assessments.

Savings Identification

- Analyze actual consumption data in comparison to your established energy baseline to identify discrepancies.
- Integrate a real-time AI module to monitor and report on energy savings.
- Analyzes site-level performance to detect inefficiencies and deliver data-driven optimization strategies to reduce energy - generating on average an additional potential saving of 25%.

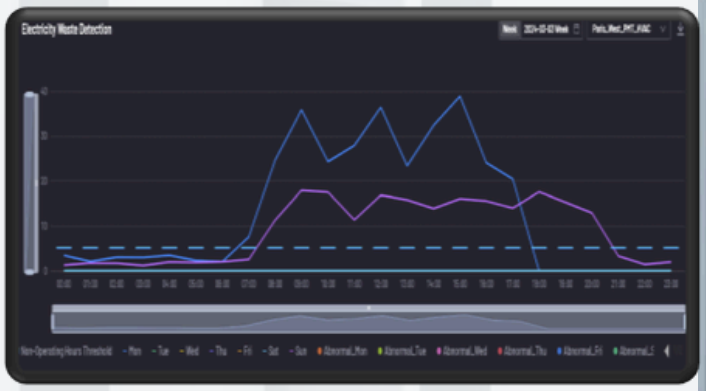
Track Performance Against Targets

- Establish energy and carbon targets in alignment with the Science Based Targets initiative (SBTi) and monitor the performance of each facility relative to these objectives.



Site by Site View
Portfolio View
Asset View

Customisable site dashboard: aggregated energy consumption data





Set up energy performance KPI's based on the site's specifics



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