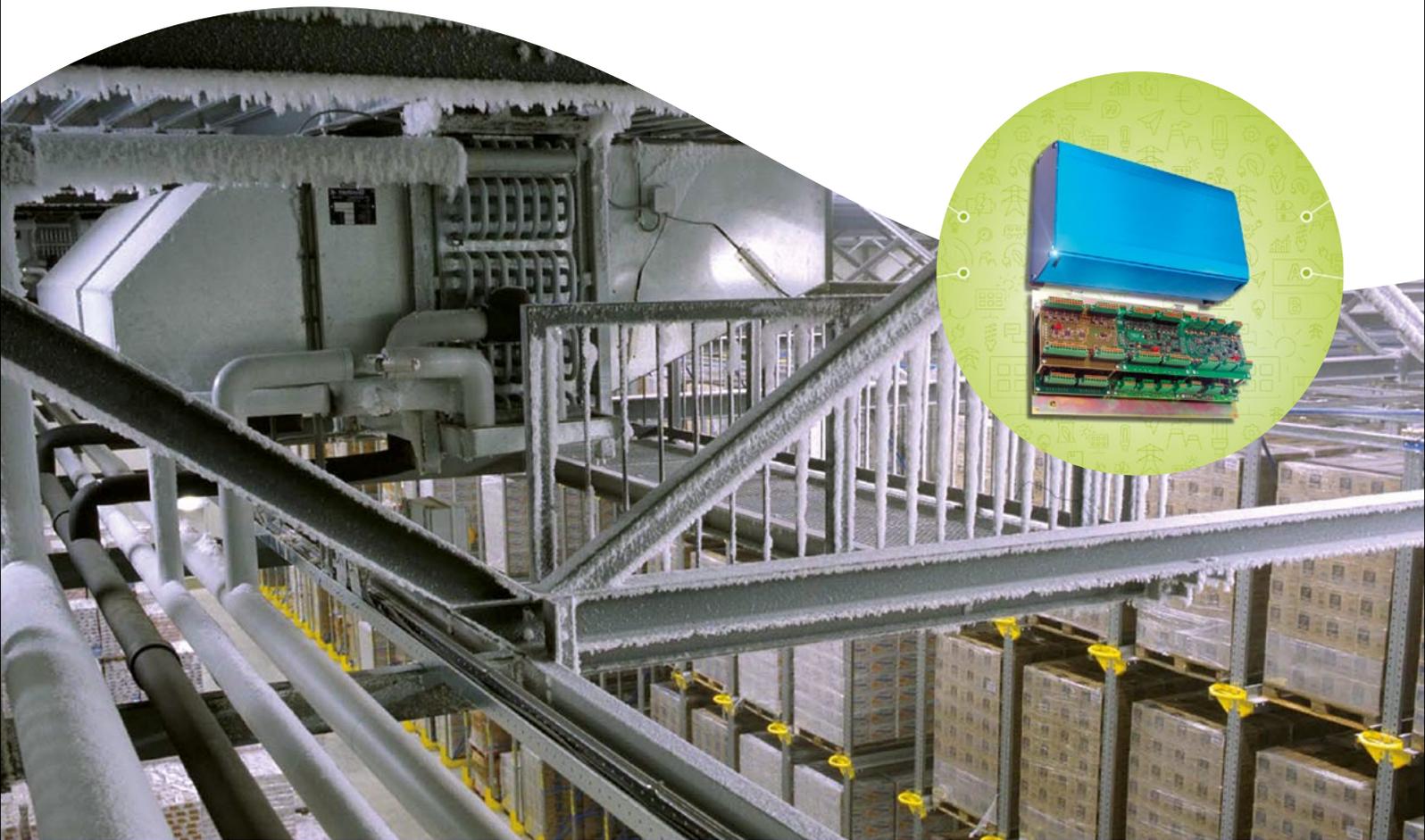


Demand response for cold storage

Reducing energy bills for cold storage and refrigeration

Intelligent demand response to optimise energy consumption



Smart demand response

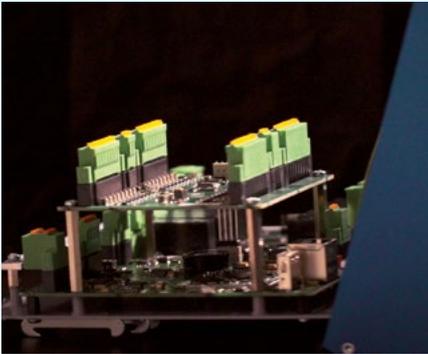
Optimise energy consumption

Reduce cold-storage overheads

Guarantee compliant refrigeration

Improve grid load balancing

Enable greater renewable generation



The challenge

Reducing the costs of energy-intensive refrigeration

Energy-intensive refrigeration and chilling facilities are a significant business overhead in a variety of industries. Cold storage operators in logistics, pharmaceuticals, retail, electronics and food sectors need to minimise their energy costs, while their energy suppliers want to reduce the impact of refrigeration on power supply and grid assets.

Engie has developed Estore to meet both these needs. Estore enables cold-storage facilities to automatically adjust their energy consumption based on a combination of temperature and price signals without any loss of performance. At the same time it allows energy suppliers to improve their load-balancing capabilities.

The solution

Demand response and load balancing for perfect performance

Estore is a controller for refrigeration systems that automatically adjusts power consumption in response to price signals from the grid, without impairing performance of the refrigeration unit.

Estore takes advantage of the natural storage capacity inherent in refrigeration technology to draw power from the grid at the cheapest rate on the day-ahead market. Its self-learning algorithms monitor the entire refrigeration process to understand how a freezer or refrigerator behaves. It then uses that data, alongside price signals from the market, to safely adjust power consumption. Using Estore, cold-storage operators consume energy at the lowest price while ensuring temperatures remain consistent and compliant with relevant industry regulations.

Estore can be retrofitted into existing refrigeration and cold storage units, or built into new machines as a key feature of an energy-efficient design.

Key features

Estore is a refrigeration control unit that enables automatic demand response, with the following features:

Software controller to automatically adjust energy demand in response to grid price signals

Self-learning algorithms that guarantee consistent and compliant refrigeration levels

The value

Cost-effective and compliant cooling

Using Estore guarantees cold storage operators the lowest energy price for their refrigeration, significantly reducing their overheads without compromising any aspect of performance.

Energy supply companies that offer Estore to their customers benefit from greater load balancing capability, helping them to optimise use of existing grid assets, and ensure continuous supply in the face of growing demand.

Effective load balancing makes it easier for energy suppliers to integrate intermittent and non-dispatchable generation into the energy mix, to meet public and political demand for greater use of renewable energy sources.



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