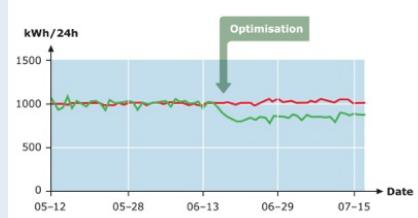


The ClimaCheck Performance Analyser

Approximately 20% of total world electricity consumption is used for refrigeration and air-conditioning and in many operations cooling can represent more than 50% of the entire electricity cost.

The unique, patented and award-winning ClimaCheck method offers an easy and accurate way for analysing virtually any system. The ClimaCheck method provides several advantages:

- Reduced electricity consumption of 10-40%.
- Reduced environmental impact.
- Reduced repair costs.
- Longer plant life-time.



ClimaCheck is today used in several hundreds of installations worldwide and is gradually becoming a preferred method for performance analyses.

ClimaCheck in Supermarkets



ClimaCheck Performance Analysers have proven to save energy in supermarkets around the world. The system is used both for inspections, troubleshooting and permanent monitoring. ClimaCheck's monitoring systems are installed in more than 100 supermarkets offering continuous energy monitoring versus the systems "energy profile". Furthermore, the early warning system notifies via SMS and e-mails if any system component loose performance.

In Sweden the leading supermarket chains require that performance is measured and documented at commissioning in accordance with the guidelines. Using ClimaCheck's field measurement system, performance is validated in relation to specifications. A commissioning with detailed documentation of the refrigeration process minimises future unnecessary service calls and warranty costs.

Customer case Supermarkets, Italy

Customer profile

One of the major supermarket chains in Italy with several hundred stores. The monitored equipment is refrigeration low and medium temperature racks with between two and six reciprocating semi hermetic compressors in each. Some systems are equipped with heat recovery and a few have economiser.

Implementation

After initial demonstration on a supermarket in Milano, ClimaCheck performance analysers were installed as a pilot test on six supermarkets. A team of experts from the supermarket, their contractor and ClimaCheck evaluated the base line operation of each plant followed by optimisation measures that included:

- ✓ Repair of compressors where isentropic efficiency is low.
- ✓ Correction of charge level on system that during some conditions proved to be over or under charged.
- ✓ Adjustment of controls to reduce energy consumption;
 - Reduce start and stop through optimisation of settings and time delays.
 - Avoid unnecessary low evaporation and minimize condensing through optimised set points.
- ✓ Cleaning of condensers with high temperature difference to ambient.
- ✓ Adjustment of economisers.

Result

Total achieved savings for the seven month test-period in these six stores were 318 000 Euro with a payback time of less than three months. After the pilot study around 100 stores has been equipped with fixed ClimaCheck monitoring systems.

