



Press Release

Why more convenience stores means more energy efficiency challenges

Tony Wright, Divisional Director at ebm-papst, a worldwide manufacturer that provides energy efficient fans, motors and solutions for refrigeration at several of the UK's leading supermarkets, explains why the recent move towards smaller convenience stores means greater energy efficiency challenges for the sector.

Refrigeration use in convenience stores

The recent drive of the major supermarkets towards smaller convenience stores rather than building bigger superstores has been well documented. This move is partly in recognition of wider consumer trends with the average food shopper now increasingly doing smaller shops every day rather than a big shop once a week.

However, this move towards convenience stores brings forward a number of challenges for retailers striving to achieve greater energy efficiency in their buildings' operations. This is highlighted by the energy use of refrigeration equipment, with Carbon Trust figures indicating that 70 per cent of energy costs for small stores can be attributed to refrigeration, but for the bigger supermarkets the figure is less than 50 per cent.

A significant proportion of energy used in smaller convenience stores goes towards powering the energy-intensive refrigeration cabinets. All stores big or small will have chiller cabinets, which actually use the most energy overall out of all refrigeration systems – in the UK they use around 5,800 GWh per year, costing approximately £500 million.

Despite wide-spread commitments from all the major supermarkets towards energy efficiency in their stores, it can be difficult for convenience stores, as they don't have the same level of investment and resource in place. Big superstores will have dedicated energy managers and higher levels of capital investment available for energy efficient equipment, but this may not be the case for the convenience stores.

So what can be done to improve the energy efficiency of refrigeration in convenience stores?

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Energy efficiency refrigeration solutions

There are changes to refrigeration systems that don't require costly actions, with the Carbon Trust stating that up to 20 per cent of energy savings on refrigeration can be made through actions that require little or no investment.

At the same time, upgrading the fans and fan motors in refrigeration systems can provide substantial energy and financial savings, as refrigeration typically requires the most amount of fans out of all energy-using equipment in supermarkets. Many chiller cabinets still work with conventional shaded-pole motors, consuming considerable energy. There are energy-saving motors (ESM), including those supplied by ebm-papst, that have an efficiency of over 70 per cent and require only around a tenth of the power, so installing these motors in refrigeration systems can result in substantial savings for convenience stores.

However, the greatest opportunity for maximising refrigeration efficiency will be at the specification and purchase phase of its life. During its lifetime the energy costs of a new refrigeration system will be several times greater than the original purchase price. Therefore, it is worthwhile making sure that a new system is as energy efficient as possible, and then making sure that the product or solution can be successfully integrated into the convenience store.

In addition to having the right system, having the right set of controls can also make a difference. Installing smart controls that can vary the temperature and turn the system on and off when required is the next best thing to having an energy manager in a store making sure the system is being as energy efficient as possible. This removes the barrier for convenience stores in not having a dedicated energy manager, as training on controls means most people could be placed in charge of the system.

Financial support

The high cost savings on refrigeration can help counter the impact of the initial high up-front cost, but luckily there is support available for businesses looking to invest in more energy efficient technology and systems. Enhanced Capital Allowances (ECAs) are available to provide businesses with tax relief on investments in energy efficient technology, while Energy Efficiency Financing offers leases, loans and other financing options to all types of organisations seeking to reduce their energy use and purchase more energy efficient equipment and technology.

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Conclusion

In recent years, supermarkets and retailers have made great strides in investing in energy efficiency and sustainable solutions in their stores. However, much of this investment will go towards bigger superstores rather than the smaller convenience stores that are appearing more and more across UK high streets. This will need to change if supermarkets are to maintain this strong commitment to energy efficiency and sustainability.

There are small changes that can be made to refrigeration to bring about energy savings, but substantial energy savings will be made from looking at the whole system and making the necessary changes. This could be through upgrading the fans and fan motors, or from installing new energy efficient refrigeration systems. This might provide supermarkets with a high initial up-front cost but will also provide them with high energy savings in the long-term. If systems are coming to the end of their life, then it's a no-brainer to make sure that any new refrigeration systems are as energy efficient as possible.

Once these systems are installed, then installing and understanding controls will be vital. Most convenience stores will not have a dedicated energy manager, so training staff and installing intuitive controls, not just for refrigeration but for all energy use, will be important for convenience stores as they look to get a handle on their energy use and lower costs.

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