How Pick n Pay cut its electricity bills and saved

IN JUST five years retail giant Pick n Pay has cut its electricity consumption by 30% and saved itself more than half a billion rand – but shoppers who keep flocking to its stores are largely oblivious to the much greener environment in which they're now buying their groceries.

The group's property director Izak Joubert says that reducing energy costs has been important to ensuring Pick n Pay's sustainability.

In 2008 Pick n Pay corporate stores - company-owned Supermarkets and Hypermarkets in South Africa - consumed 472 million kWh, a figure that had been reduced to 452 million kWh by the end of March 2014. But, most significantly, in that period the number of corporate stores grew from 170 to 212. While total electricity consumption went down, the number of stores went up by fully a quarter. What happened is explained by a line in the Pick n Pay Holdings integrated report for FY2013 disclosing the group's all-important energy-intensity figures, the fact that in just three years - from 2011 - Pick n Pay corporate stores cut their electricity consumption per square metre from 528kWh/m^2 to 431kWh/$m^{2.}$.

According to Joubert, Pick n Pay has saved R508 million in energy costs since 2008 not by investing huge amounts in new equipment or retrofitting existing equipment but by changing the behaviour of its staff and managers. "First of all, we needed to know where energy was being consumed in our stores," says Joubert. "Then we started to implement a plan to ensure that no more energy was being used than was necessary."

The 'change programme' implemented by Pick n Pay nationwide consisted of:

- Metering all stores as well as sub-metering areas that were large users of energy, including refrigeration, lighting and bakeries;
- Setting up energy dashboards that are used on a daily basis to ensure stores remain within their parameters;
- Reviewing the dashboards on a daily, weekly and monthly basis; and
- Monitoring the individual stores' accounts received at head office to confirm that they accord with central records.

"You can only manage what you know and so it was essential that, first of all, we figured out where we were consuming energy and what was really necessary to continue our operations," says Joubert. "Once we had accurate measurements in place we put together a detailed monitoring strategy – the dashboards – to continuously measure performance."

(Within a typical Pick n Pay store the largest consumer of electricity is refrigeration followed by air-conditioning, lighting and then departments such as bakeries and hot deli-foods, in that order.)

According to Joubert, even in shopping centres where a company store is just one of many tenants, Pick n Pay outlets do not rely on third-party metering but know precisely what electricity each shop is using. The information obtained from the dashboards is shared across stores and regions and, says Joubert, "because they're being compared with their peers, managers are incentivized to be as energy efficient as possible; it's a bit of carrot but no stick."

Energy-saving protocols inside stores include switching off lights at night except in those outlets that have night merchandising, in which case a night-merchandise setting is implemented. After hours night air-conditioning is turned off except where it is necessary to keep it on, for instance in the fruit and vegetable sections. Store management are also responsible for ensuring that night air curtains are used every day.

Despite saving hundreds of millions, shoppers' experience inside Pick n Pay stores has not been affected. "Our stores have always been known for being well lit and we have not compromised on this – instead we've simply used more efficient lighting," says Joubert.

Physical changes that have been implemented include retrofitting refrigeration with electronic controls and other technologies (which has resulted in refrigeration efficiencies improving by 20%) and installing voltage-optimization technology where data has suggested this would be cost-effective.

In the past 12 months Pick n Pay spent some R55 million on physical changes to reduce its in-store electricity consumption but it expects all such investments to pay for themselves within at least five years.

"We use LED lighting in signage and in refrigeration cases and have started using LEDs for spot lights in areas like fruit and vegetables," adds Joubert. "However, we don't use LEDs for main store lighting yet because the number required to achieve the same light levels as our existing energy-efficient T5 florescent lighting does not yet justify the cost."

The greenest of Pick n Pay's stores is its flagship On Nicol supermarket in Hurlingham, Johannesburg, which opened in 2010. At the store skylights and double-glass walls spread natural light during the day and solar paneling and timers have been installed.

"Stores like On Nicol are over 40% more energy efficient than our pre-2008 stores with On Nicol becoming the benchmark by which we measure new stores," says Joubert. Most of our energy consumption is in refrigeration and so it stands to reason that we need to look closely at refrigeration technology; On Nicol has a fully natural refrigerant plant which uses CO_2 and ammonia. While On Nicol uses daylight harvesting very successfully, not all new stores have a soft roof construction but the success achieved at this store means that we are looking increasingly at this option for new buildings."

To date the dashboard system of monitoring energy efficiency has been implemented at over 200 Pick n Pay stores but, according to Joubert, the results have been so dramatic and so compelling that franchisees and others have started to learn from the group's experience. "A number of our franchises

are adopting our programmes either in full or in part and our Boxer stores are also now implementing some of the Pick n Pay programmes. We've also found that some of our landlords are showing interest in what we've achieved. Of course we're very willing to share with them our lessons learnt, our successes and our challenges."

Andrew Etzinger, Eskom's Senior General Manager of the Integrated Demand Management (IDM) department, says: "Although Pick n Pay is a very large national retailer, some of its experience can be duplicated at retail operations of almost any sizes and type - most importantly, retailers have to change their energy use behaviour and that of their staff."