

## sustainability



Courtesy of Red Ant Solutions

# Green issues will set future trade strategy

Despite the recession, the drive towards greener brands is gaining momentum and sustainability issues are beginning to take centre stage for many companies, especially those supplying their products to supermarkets. Smart machinery designers are now putting these issues at the centre of their product development programmes as total life cycle analysis starts to look at how products are made and physically packed, and not just the packaging materials involved in this process.

Indeed, sustainability issues were being addressed in machinery design and construction at interpack two years ago, and not just by finding ways to use recycled or eco friendly materials. Factors such as energy and water consumption were coming to the fore then as well as smaller footprints for equipment.

And even if project engineers are not

asking about sustainability issues today, they will be very soon.

According to research launched earlier this year, over one in five brand managers and product designers reported that their companies were planning a major environmental initiative for the year ahead. And at product level, 40% said they plan to implement a product innovation designed to improve environmental performance over the next 12 months.

Just 2% said green packaging had become less important in the recession. Indeed, the green trend appears to be accelerating, despite the economic downturn. For instance, 39% said they are more committed to the environment than they were a year ago.

But it's not just the commercial folk looking for marketing kudos from eco friendly packs as quite often, it's just plain good business

sense to use less material, use less energy or use less water. After all, it saves money.

Of course price, quality and service is still key in most selling negotiations but cost reduction and sustainability improvements often go hand in hand, especially for larger blue chip companies.

And let's not forget other key drivers such as the packaging waste regulations as well as the Carbon Reduction Commitment scheme (CRC) administered in the UK by The Environment Agency.

When the dust settles from this recession, the companies still standing will be the ones looking forward, anticipating customer wants and needs in the coming years. Sustainability is not a crazy fad that we're all going to wake up from with a hangover. It's here to stay, and the next few pages will show how it is being tackled throughout the machinery sector as well as by its customers.

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# Green features bring bottom line benefits

**Machinery Update** reports on how the machinery sector is addressing customer demands for eco-friendly options and how this will impact future research and development programmes

How to reduce costs has been top of everyone's agenda in these recessionary times and it's all well and good banging on about the environment but what if your main concern is how to pay your staff at the end of the month? For many SMEs, the economic meltdown and the restrictions on credit have been all consuming and so it is understandable that 'save the planet' may have moved down their business agendas.

But is it really a matter of having one or the other? And can anyone afford to ignore sustainability issues even if economic times are tough?

## Eco policies

Guy Levy, managing director at Ilapak says environmental issues can also form part of purchasing decisions today especially with companies that have published environmental policies in place. "Some of our larger customers do ask what our policies are in this area," he explains.

"Before the start of the recession, the main environmental focus our customers discussed with us was changing to



*Domino's C-Series plus range has low power consumption, while the C6000 AS plus outercase coder has been designed to reduce end of line complexity*



*Ilapak's new Carrera 4000 incorporates energy saving features such as the use of energy recuperation systems in the motor drives*

biodegradable and compostable films," he continued, "now the environmental focus has all been about packaging waste reduction." Specifically, projects looking at the removal of trays from products such as tomatoes, citrus fruit and other fresh produce as well as chicken, sausages and other foodstuffs.

"These types of projects appear to have come on stronger because of the cost savings offered," he explains.

## Sustainable R&D

Ilapak is a company that has spent time understanding sustainability at a group level and its R&D programme concentrates on bringing operating costs per pack to the lowest level including energy and material consumption. "At the heart of our development process is to ensure a machine runs as long as possible for as little as possible," says Levy. "A low total cost of ownership is consistent with being sustainable."

"Driving out inefficiencies and waste is environmentally sensible but also makes sense commercially," he says.

And strategic product director at Domino Printing Sciences Lee Metters agrees.

"Anything that improves sustainability is also good for your back pocket," he argues.

Metters says that blue chip companies ask for environmental credentials as part of the buying process today and that there has been an increase in questionnaires relating to sustainable issues. "It's definitely not true that the recession has made sustainability go away," he says.

As a global company, Domino faces extra challenges in terms of NPD as often, what is 'environmentally friendly' in one country is not in another. "The challenge with sustainability is that everyone has different views but this will change over time and we will see more convergence," he says.

Domino has seen a steady increase in customer demand for sustainable options which is reflected in its long term

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*The Linx 7300 Solver 'thinks as it inks' to reduce solvent consumption by up to 40%*



development and business plans. "People expect improvements but don't want to pay for them," he says. "But it has to be part of the overall offer."

Major issues for the company include ink consumption; energy consumption and safety. Reformulating inks to remove unpleasant materials from them brings its own challenges and can lead to increased energy consumption if dryers have to be used for water based options. "There is no global trend on this at present which is part of the challenge," says Metters.

Reducing waste across the supply chain is a goal set for every supplier and Metters believes delaying customisation of packaging until later in the chain offers benefits in terms of sustainability.

### Saving resources

Sustainability is definitely part of Ishida's development plans as it believes efficient production lines save money as well as resources. Torsten Giese, marketing manager, PR and exhibitions at Ishida says that designers at the company always look at material usage and energy consumption as part of the process as well as overall sustainable efficiencies.

Currently, it is the larger companies that have the eco programmes in place but Giese believes smaller companies will have to catch up in this area, especially in fresh food where waste is an issue. He predicts that food waste will be a big issue at the next interpack and manufacturers should

instead address this in developing new machinery now.

And Giese is quick to point out that incremental steps in machinery design can make a big difference across an entire plant's performance. For instance, Ishida's top range of weighers offers energy savings of 30% due to increased control of the feeder vibration.

### Monitor efficiencies

And then there's the bag makers which can switch to sleep mode when not in use as well as the Eco-display units which show how much power and materials are being used to monitor overall line efficiencies.

One of the developmental challenges identified by Giese is making equipment run at the same efficiency levels as today, with 'eco-films' in the future.

Sustainability issues are all part of the design of equipment at Linx Printing Technologies and have been for the last two to three years. "Fundamentally, it's all about minimising the impact your operation has on the world as well as reducing the waste," says Paul Doody, marketing director at the company.

"It's tough to design small and light rather than big and bulky but we require our designers to actively do this as well as lowering power consumption," he continues. "We try to take a holistic, lifestyle approach to design."

Doody says that customers do ask about sustainable issues in terms of eco-friendly

elements of the machine but also the hidden side of what it means to be sustainable, ie whether the equipment offers reduced solvent consumption which also offers value and saves money.

"Sustainable issues seem to be on customers' wish lists but it is probably not the first priority if you are battling against insolvency," he says.

"We don't make a fuss about our eco-credentials, instead concentrating on reducing factory costs while delivering benefits in terms of reduced solvent consumption."

In April, Proseal launched a seal force system that increases the effectiveness of the sealing process while at the same time achieving a dramatic reduction in air consumption compared with traditional high speed tray sealing machinery.



*Ishida's top range of weighers offers energy savings of 30% due to increased control of the feeder vibration*

"Our approach to machine development and new technology means we are constantly seeking to improve all aspects of our machines' performance," says Carl Pphythian of Proseal. "We believe EcoSeal is a major breakthrough as it enables companies to demonstrate a real commitment to environmental issues while at the same time delivering tangible improvements to the bottom line."

As Paul Doody of Linx says: "Sustainability is just part of good design."

# Kerrygold site is eco star

When The Kerrygold Company invested £30 million in a factory and office complex in Staffordshire a year ago, it was billed as one of Europe's most environmentally

friendly facilities. Speaking at the opening ceremony last May, managing director Carl Ravenhall said the plant represented a significant achievement in becoming

'best in class' in the dairy sector.

"The new factory helps us to consolidate our position as the UK's largest retail supplier of cheese, sets a new benchmark for process efficiency and hygiene standards, and provides additional capacity to support the future growth of the business," he said at the time.

In creating the new facility, the company also took the opportunity to consider its impact on the environment. It set about incorporating 'green' technology where it could which resulted in a 15% reduction in its carbon footprint last May.

"This has not only made us greener, but it has also helped improve efficiency," said Ravenhall.

One year on, *Machinery Update* has talked to Kerrygold and found that the plant has reduced gas use by 44%, reduced electricity use by 9% and has now reduced its carbon footprint by 17%. It has also used 43.5% less water a year than the previous facility due to an improved wash down system, improved boilers (non steam) and an integrated process chilled water system.

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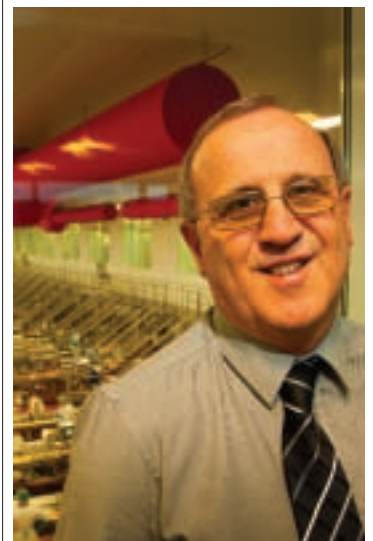
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Dave Turvey is operations director at The Kerrygold Company. Over £30 million was invested in its new factory in Leek a year ago

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Over three million packs of cheese are packed for retailers' own label products in the packing hall each week

The company has made some significant moves to improve its carbon foot print via:

- Combined heat pump: Generates hot water which is used to supplement the cleaning operation at night (in addition the system gives back up electricity supply for the IT & office function)
- Daylight roof panels: Installed within the packaging stores reducing the amount of light fittings required
- Inverter Drives: All air handling, chilled water and refrigeration systems have inverter drive controls which can be controlled in line with the demands of the internal and external environment by the BMS (control system for the building, which is able to monitor factory, office and warehouse temperatures, as well as monitoring electricity, gas and water usage)
- Sub metering has been installed to monitor the energy consumption within the grated cheese section as part of Kerrygold's Climate Change Agreement. In future, each process line will be monitored to allow energy costs to be examined a lot closer than in the past.

Operations director at Kerrygold Dave Turvey is delighted with progress so far but is keen to point out that the company is always looking at processes and the machinery it uses to see where it can make improvements in terms of environmental performance. For example, the company is currently working on increasing its recycling capabilities in waste streams such as cheese residue, films and shrink wrap which equates to about 18% of all the general waste at the site.

"Recycling this material will reduce our waste plastic which means we are not only reducing our impact on the environment, but also helping the business become more efficient financially," explains Turvey.

"When sourcing new machinery, sustainability and our impact on the environment is a key part of our decision making process, alongside efficiency, reliability and cost saving," says Turvey. And this is why the company now monitors the power consumption of its key packing lines (grated, slices, fixed weight and vacuum packed) via an EFT Energy Manager control system. "This information allows us to look at the efficiencies within our factory and respond accordingly," he says.

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# Plastics waste gets sorted

S+S Inspection has won a £1.7m order to equip a mixed plastics recycling facility being built by Greenstar WES with funding from WRAP (Waste & Resources Handling Action Programme). The new flake purifier

multi sensor was instrumental in the company winning a three way contest for the contract.

The new facility is a world first for Greenstar WES and will process 20,000

tonnes of mixed plastics from household and consumer recycling collections a year. The nature of the plastics to be sorted include a mixture of margarine tubs, yoghurt pots, meat trays and other

consumer packaging which place significant demands on the sorting and separation equipment.

The new S+S flake purifier uses a combination of NIR (near infra red) and CCD (charge coupled device) cameras to sort mixed plastics flakes.

New technology polymer type identification by NIR absorption characteristics can separate a single combination of colour and plastic type, such as light blue PET from a mixed material stream.



The 2500 S+S flake purifier SM300 sorts mixed plastics flakes

In the configuration for the Greenstar WES installation, S+S uses Varisort machines to sort mixed plastics, colour sorter variants of the flake purifier to separate coloured plastics and the NIR version of the flake purifier as the final stage to separate flaked polymers into pure final product streams.

The sorting and separation equipment will be delivered in September and the new Teeside facility is planned to come on stream in early 2011.

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# Italian water saves energy

Italian mineral water bottler Tione is operating the first Krones ErgoBloc L line and has lowered its energy consumption by 30 per cent over the previous equipment used.

The Krones ErgoBloc L is a concept premiered at drinktec last year and is a complete, ultra compact wet-end monobloc comprising a blow moulder, a labeller and a filler, with pre-labelling performed prior to filling. It has added 28,000 PET bottles an hour to the plant's output, equivalent to another 150 million containers of annual capacity.

At the same time, Tione is operating the first enviro machine from Krones.

"We really liked the look of this sustainable technology," says plant manager Fabio



The Tione plant manager is Fabio Fioravanti

Fioravanti. "We expect enviro to give us energy consumption figures that are 30 per cent lower compared to our existing line.

"We also aim to take this opportunity to reduce the preform weights, from 32 to 28g, for example, in the case of the 1.5 litre bottle for carbonated beverages," he continues.

"Overall, thanks not least to enviro, we're confidently

predicting a line efficiency of more than 95% which will give us competitive advantages in the fiercely contested water market."

T: 01942 845000

E: sales@krones.co.uk

## Utensils washed at less eco cost

Industrial Washing Machines (IWM) has reduced the energy needed to heat the water used in the wash tanks of its EDI series of utensil washers by more than 60% thanks to new heat pump technology.

In addition, steam emission from the machines is virtually eliminated which means that further savings can be made on the extraction systems used to vent the machines to atmosphere, and that there is no build up of humidity or heat in the rooms where the machines are used.

The heat pumps used with the washers are essentially devices for moving heat from a body at a low temperature to a body at a higher temperature and work on the same principle as an ordinary domestic refrigerator.

These heat pumps are available as an option on all new utensil washers and can be retrofitted by IWM to existing machines.

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Washer includes energy saving heat pump

### IN BRIEF

This October's **Pack Expo** (Oct 31-Nov 3, Chicago, USA) will feature the new Reusable Packaging Pavilion, sponsored by the Reusable Packaging Association. Located in McCormick Place's Lakeside Center, more than 20 exhibitors will feature to offer economic and environmental benefits for visitors, say organisers PMMI. T: 00 1 703 243 8555 E: expo@pmmi.org

At Total, **Parker Hannifin** showed its latest Midigas and Maxigas onsite nitrogen gas generators which, because of the greater degree of control afforded, help to limit waste and reduce overall energy consumption while extending the operating life of the unit to in excess of ten years. T: 0191 402 9000 E: gasgen@parker.com

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# Recycling saves a bundle

Pets at Home has saved tens of thousands of pounds in waste collection costs as well as doubling its recycling rates to over 70% since Gough Engineering completed a waste sawdust separation plant at its National Distribution Centre in Stoke-on-Trent, Staffordshire.

The company has 25 tons of sawdust and hay returned from its 260 shops each week and this contaminated animal bedding costs in excess of £50 per 100kg in landfill charges. The design and layout of the new plant was developed following trials at Gough's Stoke-on-Trent facility by engineers from Pets at Home, Gough Engineering and Nicholls Air Systems.

The outcome was a vibratory feeder, screening and conveying process followed by a vacuumed air separation hood. Waste enters a Gough receiving hopper to accommodate two large bags, it is then fed into two heavy duty linear vibratory feeders

that convey the wood chips contaminated with small pieces of animal waste, card, plastic and wood at a rate of 1300kgs an hour.

The waste is screened along the feeders and the heavy undesirable items fall into a collection bin to be disposed of, while the lighter recyclable hay and sawdust is sucked and blown by the 'air knife' separation vacuum, as supplied by Nicholls Air Systems, into a 14m sealed road wagon to be sent off for recycling.



The sawdust separation plant installed at Pets at Home has doubled recycling rates at its National Distribution Centre

The Pets at Home Distribution Centre processes 120 pallets a day on a 24 hour cycle, which equals over 50,000kgs per day being screened and recycled.  
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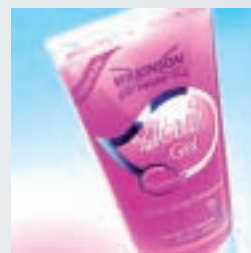
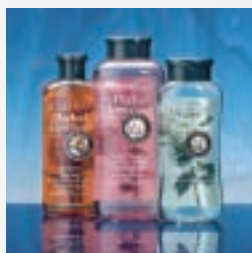
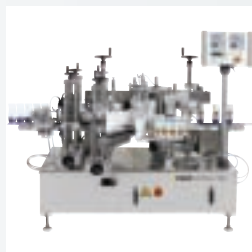
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