

## In it for the long haul

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### Introducing ENDS

Environmental Data Services Ltd has been publishing environmental information for business since 1978. The ENDS Report is our monthly journal. We also publish a European news service, ENDS Environment Daily, and information on the environmental consultancy market. See [www.ends.co.uk](http://www.ends.co.uk)

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*This month marks the 25th anniversary of the first edition of this publication. We can be pleased, at least, by our longevity, but our celebrations have been muted by the death in April of Max Nicholson, one of the last century's great figures in nature conservation. Together with David Layton, another figure of distinction in public service and publishing, Max, then aged 73, conceived of a publication to educate and inform people in business and government on environmental matters - and it was thus, in 1978, that Environmental Data Services was born. We owe both of them a great debt.*

*Looking back to that time, we can celebrate, too, the passing, by and large, of the grosser forms of air and water pollution and indifferent waste disposal practices from this country. On some other fronts, though, progress has been less inspiring. Our first edition reported a Minister as saying that wave energy was "likely to be a front-runner for this country among the renewable energy sources" after watching the first sea trials of a Government-funded prototype device - but a few years later the programme was killed off by vested interests and has only lately been restored.*

*In language ahead of its time, our first edition promised that we would "give special attention to developments permitting the better integration of environmental aspects as a normal element in management operations." Since then, we have written almost 200 feature-length company reports mostly devoted to that goal. We could scarcely have envisaged in 1978 that the environmental integration message would have permeated into the leather industry, then a byword for conservatism whose main preoccupation in environmental matters was next year's trade effluent charges. This month, the subject of our company report is leather manufacturer Pittards. Thanks to a combination of its own foresight and supply chain pressures, the company has established the foundations for differentiating itself on the basis of its environmental performance - a canny strategy in the sector's harsh competitive climate (see pp 22-24).*

*Our other two features this month are both about developments originating at EU level which can be traced back to the late 1970s. The Directive on environmental impact assessment, adopted in 1985 after several years' intransigent opposition from the UK, has made EIA a normal feature in the planning of major projects. Its benefits have been proven, and it has supported the growth of environmental consultancies which now form an important part of the country's environmental protection infrastructure. The industry was given a further growth spurt by recent amendments to the 1985 Directive, although, as our report explains, these have also caused the customary initial inconsistencies in practice around the country (see pp 25-29).*

*Serious EU chemicals legislation dates back to 1979, when the so-called sixth amendment Directive introduced pre-market testing and notification requirements for new substances. Like EIA that preventive regime has proved a success in keeping nasty new chemicals off the market. But what came afterwards - a programme to get to grips with older hazardous substances on the market - failed to deliver, prompting a major overhaul of EU chemicals policy on which the European Commission began final consultations in May (see pp 30-33). The reform package continues to provoke howls of anguish from the chemical industry and, while these may well be over-egged, there can be little doubt that the price of a cleaner environment will in this case be a further diminution of the EU's manufacturing base.*

*We wrote in May 1978 that we were "independent of any environmental (or industrial) lobbies or factions" - the parentheses saying something about the business mood of the time. We remain so, and that means that we occasionally make ourselves unpopular - but our service would be the less valuable without our telling things as we see them after careful analysis. So, this month, we will again irritate our friends in the Department for the Environment and major businesses by reporting on the mounting evidence that the UK emissions trading scheme is a great deal less than they have made it out to be - in fact, that it is a desperately ill-conceived scheme (see pp 4-5).*

*We sometimes get it wrong. Our first edition reported that Sweden's complaint about the UK's exports of acid rain to its territory had been "proved to be misconceived" by a British study which showed that levels of sulphur dioxide reaching Sweden were very much below those at which any environmental damage could be caused. It was patent nonsense - and we hope that we have since learned to be more discerning.*

# Pittards: Putting a green finish to the leather industry

The British leather industry has declined steadily over the last few decades in the face of strong competition from low labour costs in the developing world. But Pittards, the UK's second biggest manufacturer, is focusing on its environmental performance in order to differentiate itself in the marketplace. The company has established a good platform with its environmental reports and management systems - and is now hoping to bring forward cleaner technologies such as effluent reuse and waste gasification.

The leather sector provides a textbook example of the pressures facing small manufacturing industries in the UK. "Fifty or sixty years ago, there would be a little tannery in almost every town," says Phil McNee, Pittards' group environmental manager. "There were three words associated with the leather industry - dirty, smelly and polluting."

Today, there are 40 leather manufacturing plants in the UK - down from 100-150 just 20 years ago. Pittards is the UK's second largest manufacturer, with some 750 employees. The company's Yeovil site specialises in gloving and fine shoe leather from goatskin, while its Leeds operation produces leather for shoes and other goods from cowhides. Pittards also produces pickled sheepskins at Langholm in Dumfriesshire - though it shut its other "fellmongering" works in late 2001.

The industry is labour intensive, and European manufacturers have struggled to compete with low labour costs in South East Asia and other parts of the developing world. The notable exception is Italy, where 2,400 tanneries still service thriving shoe, clothing and leather goods industries.

The challenge for the UK's remaining tanneries is that the markets for finished leather have moved increasingly offshore, and further and further away from the UK.

Pittard's Yeovil site offers a vivid illustration. All the skins used by the site are imported, mostly from Africa. At the same time, 90% of the site's output is exported - largely to glove manufacturers in Asia.

## Gaining an environmental edge

These dynamics raise interesting questions. What future is there for leather manufacturing in the UK? And what

can manufacturers do to retain a competitive edge against low-cost competitors in developing countries?

Phil McNee is clear on the first question: "Pittards is a plc, but it's been in the Pittards family for over 150 years. The family have a strong vision that they want to remain as a British manufacturing company." John Pittard managing director since 1980, is the sixth generation family member to run the company.

The company's strategy has been to differentiate itself in the marketplace, mainly by focusing on high quality technically advanced goods for clothing, shoes, luxury goods and sports equipment. It has made significant investments in research and development - leading to specialist leathers with a range of properties such as water repellence and fire and abrasion resistance.

Pittards has been hit by the economic climate and the foot and mouth crisis, and in 2001 reported a loss of £1 million on a turnover of £83 million. Even so, the strategy, has had considerable success in securing the firm's market position, and last year it made a £2.4 million profit.

Pittards supplies many of the world's best-known brands, such as Adidas, Nike, Puma, Timberland, Camper and Louis Vuitton. Last year, it was recognised as "exporter of the year" in the International Business Awards. It recently received another business award as "innovator of the year."

Pittard's business strategy contains another key strand - differentiation on the basis of its environmental performance. "Some of our key customers started to get on our case a couple of years ago," says Phil McNee. "It was nice to be able to say that we believe we're global leaders."

In 2000, the company became the first leather company in the world to issue an environmental report - recognised as runner-up first-time reporter in the ACCA awards that year. Its three sites won certification to the ISO14001 environmental management system between 1997 and 1999.

Pittard's top 20 customers make up 80% of its business - and Phil McNee says that 12 of them rank environmental management as an important issue in choosing a supplier.

At the front of the pack are some of the leading "superbrands" which have adopted strong environmental policies, partly in response to attacks from the anti-globalisation movement. For example, Mr McNee says, "Nike is now massive on end-of-life issues. They're convinced it's only a matter of time before the producer responsibility agenda filters down to them - and they're very keen to work with us to understand impacts and push for better disposal options."

Most other customers "recognise the environment is an issue but it is not as high as others on their corporate agendas," says Mr McNee. "We continue to educate these customers and sell the idea that it is added value to

Pittards aims to use technical innovation and environmental performance to secure its place in the world's leather markets



them that we are managing our environmental issues effectively."

### Developing an agenda

In common with many other firms, the environment emerged on Pittards' radar with the advent of the Environmental Protection Act 1990. At a late stage, leather processes were downgraded from the multi-media integrated pollution control regime to local air pollution control. Even so, the new threat led the company to appoint its first group environment manager in 1989.

At an early stage it became clear that Pittards was taking an unusually far-sighted approach to the environmental agenda. As long ago as 1994, a Demos seminar heard that the company was looking beyond regulatory drivers to develop the "green shoe" concept.

Plans were set out to produce an "eco-specification" for the product, which would be subject to continuous improvement.

When Phil McNee took over the role of group environmental manager in 1998, he had the advantage of familiarity with Pittards' activities - in his previous job as a pollution control manager with South Somerset District Council, he had regulated the firm's Yeovil works.

Mr McNee says he inherited a "really good platform to build on". But he urged the firm to focus more clearly on using the environment to develop a competitive advantage through two strands - cost reduction through process improvements, and differentiation in the marketplace.

### Benefits of reporting

Pittards is clear that its 2000 environment report has given it a significant advantage, and greatly raised the profile of its environmental policy among its key customers. "It's very, important that your environmental strategy is dovetailed in with your marketing and sales departments," says Phil McNee. "There's nothing wrong with marketing your story to your advantage - though I get the impression a lot of companies are reluctant to do that."

The report attracted the attention of the ethical investment community, most notably Jupiter Asset Management. Phil McNee says the report, which was validated by BSI, cost some £20,000 to produce - "a significant sum for a company like Pittards, but it has paid for itself just in terms of the SRI funds we are now covered by."

The report offers a broad overview of the issues associated with leather manufacture, details of Pittards' environmental policies, its performance against BLC Leather Technology Centre benchmarks, and testimonials from a wide range of customers and suppliers. It offers trend data on discharges to sewer, water and energy use, carbon dioxide emissions and packaging waste, together with a series of qualitative and quantitative targets.

The company issued a shorter follow-up report in 2002, setting out progress against the original targets and introducing new objectives for the next two-year period.

Good progress was made against most of the targets. However, plans to set performance targets for waste have been dropped. Each site has set up waste monitoring and recording systems, but Pittards says that a common system is proving "difficult to establish" because of the wide variety of waste streams and different past practices and classifications adopted by waste management contractors.

Despite the company's efforts, the various environmental performance indicators in the report show little clear improvement since 1997. Most show a slight improvement or no clear trend - but some, such as dis-

charges to sewer from the Leeds site, show an increase. The patterns for total energy use, water use and discharges are similar, suggesting that production levels remain a dominant factor.

This lack of dramatic improvements is partly a result of the company's relatively good historic performance. However, it also helps explain why the company is keen to develop more advanced technologies to reduce its environmental footprint (see below).

### The chromium question

Making leather is a complex process which can involve a wide range of chemicals including solvents, metals, surfactants and flame retardants. "We'd be foolish if we think we're insignificant enough as a sector or a company not to be targeted by the likes of Greenpeace," Mr McNee says. "We use a lot of chemicals and have a range of significant environmental aspects."

So far, the most sensitive issue concerning leather-making has been the use of chromium as a tanning agent. The industry uses chromium (III) rather than chromium (VI) which is toxic and a suspected carcinogen. Chromium (VI) was the pollutant behind the major US civil litigation case portrayed in the Julia Roberts film *Erin Brockovich*.

"We've got massive perception issues on the back of *Erin Brockovich*," Phil McNee says, "even though we don't use chromium (VI), the bad guy of the film."

Pittards adopts the same line as the rest of the leather industry. It cites data from the US Environmental Protection Agency to argue that chromium (III) is the naturally occurring form which exhibits "little or no toxicity", has low solubility and does not leach from landfill sites.

Regulators do not necessarily agree. The BREF guidance note which sets out standards for tanneries under the new integrated pollution prevention and control (IPPC) regime acknowledges industry's view that chromium (III) is no more toxic than table salt.

However, the BREF also reports European pollution control authorities' view that the metal "should be considered toxic, especially for aquatic life" - and concludes, unhelpfully, that both opinions are supported by the literature. The BREF pushes tanneries towards chrome recovery from spent process liquors, though the conclusion was not endorsed by industry bodies.

The debate leaves Pittards in a tricky position. On the one hand, Phil McNee argues that "the science says that chromium is probably as good as anything else. What's more, tanning is just one step in a complex process - and arguably other steps like washes and soaks have greater impacts."

On the other hand, some leather users are starting to specify products made with alternative tanning agents - and Pittards does not want to lose out on this business. The desire not to foreclose other options meant that the firm did not set any targets for water use - since alternative vegetable-based tanning agents have a much higher water demand and produce effluent with a high chemical oxygen demand.

"Unless you've done a life cycle assessment of the whole process and identified where the most significant impact is, you've no real answers," Mr McNee says.



Phil McNee, Pittards' group environment manager

"We've got massive perception issues over our use of chromium on the back of the film *Erin Brockovich*"

- Phil McNee

"Even then, the issue is not about individual chemicals but about the management of the whole process." Pittards is taking part in a three-year industry LCA with French consultancy Ecobilan in a bid to shed some light on the debate.

## Looking for a step change

Much of the company's activity over the past few years has focused on reducing costs through minimising waste and resource use. "The message I try to get across is that every £100 saved saves us from selling £1000 of leather," Mr McNee says.

Since 1998, the firm has been using the "20 keys" methodology - a Japanese approach which engages staff in identifying and implementing improvements to working practices. This led to a significant number of measures to reduce waste and product loss - and, as is typical for such initiatives, most were cheap and easy to implement.

One of the more significant cost reduction initiatives has just been commissioned - a so-called "flesh to fuel" project at the Leeds site. This involved converting the existing dual-fuel boiler, including fitting of activated carbon abatement, to allow it to burn tallow wastes from the cleaning of cowhides. The work cost £215,000 - but will save some £250,000 on annual fuel and waste disposal costs.

But Mr McNee is acutely aware that showing continued improvement in performance in future environmental reports will require more significant changes to the process. "Instead of the conventional 'linear' practices of using materials and resources to make products that create waste, we are working on projects that challenge this traditional approach," he wrote in Pittards' 2002 report.

The two main projects of this nature have been moving forward for some time - indeed, they were highlighted in the 2000 environmental report. Mr McNee hopes they will be starting to bear fruit in time to be given a prominent write-up in the 2004 report.

## Progress on water reuse

The first project is assessing advanced effluent treatment technology, with a view to cleaning up liquid wastes to the point where the water can be reused in the manufacturing process.

Most tanneries discharge effluent to sewer after simple physico-chemical treatment based on balancing, aeration and dissolved air flotation. Pittards is hoping that discharges can be greatly reduced by further treatment with an advanced membrane bioreactor followed by nanofiltration.

A pilot project, part-funded by the DTI and with partners including the BLC Leather Technology Centre and other tannery groups, has recently completed a six-month trial at the Leeds site.

"The treatment plant takes out problematic chemicals and brings suspended solids essentially down to zero," says Phil McNee. "The recovered water has been put back into the process in staged experiments, and we've seen no effect on product quality." It is anticipated that water can be reused at least three times.

There is, however, a catch. The treatment process results in a concentrated waste, equivalent to about 10% of the effluent by volume, containing high concentrations of inorganic salts.

"Provided we can find a solution for dealing with the concentrate, the system works well," Mr McNee says. A full-scale plant would cost more than £1 million at each site, but would lead to significant reductions in Pittards' water and sewerage bills. "The project would offer

strategic long-term paybacks, albeit not in a conventional three-year payback period for normal investments."

Membrane bioreactor technology could also offer part of a solution to one of Pittards' most pressing environmental headaches. The company is under pressure at its Langholm fellmongering works because its discharges contain sheep-dip chemicals which are present in the raw material.

In 1996, the Scottish Environment Protection Agency introduced new limits for organophosphate and synthetic pyrethroid pesticides in the consent for Langholm sewage treatment works. The water company appealed, but last year the Scottish Executive upheld the key limit on diazinon, the main organophosphate.

Pittards is the main source of the substance in the catchment. "We've been trying to get pesticides out of the supply chain since the mid-1990's," Phil McNee says, "but we're supplied by 30 abattoirs, each of which is supplied by 100 or more farms. It's almost impossible to control the problem through selective sourcing."

The company is now coming under pressure to install advanced treatment technology at Langholm. "We want to take out the OP's," Mr McNee says, "but we have a problem with lack of space on the site. We also want to see better management of sheep dip chemicals at source regulated by the Environment Agency and SEPA."

## Waste gasification

The other main technology being pursued by Pittards is gasification - seen as a solution to awkward waste streams in a growing number of industries.

A test plant is currently undergoing commissioning at BLC, and will then go to each of Pittards' sites for trials. The aim is to take a wide range of wastes which are currently sent to landfill, and to convert them to gas for electricity generation.

The £400,000 project is supported by the DTI. One major partner is Elementis - which supplies the chromium tanning agents. "We're hoping that the ash will be sufficiently rich in chromium to allow Elementis to close the materials loop," says Mr McNee. Some of Pittards' customers are also watching progress with interest to see if it is a viable option for dealing with end-of-life products.

If the project is successful, Pittards is most likely to install a full-scale gasifier at its Leeds works, which produces the largest waste stream. Each year, the site produces some 5,000 tonnes of sludge from the effluent treatment plant, 3,000 tonnes of wastes from trimming, shaving and buffing "wet blue" skins, and 100 tonnes of solvent-bearing sludge from the finishing process. Disposing of these wastes costs some £240,000 per year.

Mr McNee says that a full-scale plant could cost £1-2 million - and once again, the payback period would be slightly longer than the standard three years for conventional investment decisions. However, Pittards hopes that it would receive support under the renewables obligation, as well as helping it meet energy saving targets under its climate change agreement.

Progress with these novel technologies is important for the sake of Pittards' environmental and business strategies. More tanneries in Europe and beyond are winning certification to ISO 14001, and others are beginning to think about environmental reporting - so significant improvements in resource use and process efficiency would help Pittards to remain ahead of the game. **ENDS**

*Pittards environmental reports 2000 and 2002, available on [www.pittardsleather.co.uk](http://www.pittardsleather.co.uk)*

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- Phil McNee, Pittards