



The new Thermal Energy Plant at the Scottish Leather Group's Bridge of Weir site.

CREDIT: SCOTTISH LEATHER GROUP



Green shoots

The Scottish Leather Group has opened a new thermal energy plant at Bridge of Weir, while Ecco has enhanced its reputation for sustainable business development by launching a new Flesh to Fuel programme, in which it uses biofuel from fleshings to lower its carbon footprint. Both are examples of new green initiatives in the leather industry.

Faced with the criticism that tanning is a polluting industry, some shrug their shoulders and say there's nothing they can do. Others invest time and money in looking constantly for new ways in which to become greener.

The Scottish Leather Group (SLG) formally opened a new thermal energy plant at its Bridge of Weir site in the west of Scotland on July 15. A member of the royal family, Princess Anne, officiated at the event after touring the facility, home to the group's NCT wet blue plant and Bridge of Weir Leather Company tannery.

The thermal energy plant is the result of a £6 million investment with SLG providing

all of the funding itself. It is an important part of the group's aim of being self-sufficient in its energy use by 2015 and of a new initiative to market leather from all its facilities as low-carbon leather.

Solid waste from all SLG's Scottish sites is being transported to the thermal energy plant to produce heat energy and oil from it. The heat energy is already being used to heat water for the tanning operations at Bridge of Weir and to power the driers on site. The oil, produced from skin grease from the fleshings the group produces, is highly in demand among manufacturers of industrial lubricant and biodiesel and

SLG is currently selling most of the oil it produces, but it has the option of using this by-product onsite too. Even the ash produced during this process is in demand: companies in the construction industry can use it to colour bricks red.

"We are very pleased that the thermal energy plant is up and running," said SLG chairman, Jonathan Muirhead, on the day of the formal opening. "Our customers, particularly those in the automotive industry have shown a lot of interest in this and in our low carbon leather, and we have already picked up new business as a result. This is a landmark, a first for the leather industry."



HRH The Princess Royal at the opening of the new facility.

CREDIT: SCOTTISH LEATHER GROUP

Flesh to fuel

Danish footwear brand Ecco is another to have introduced interesting green initiatives at its own tanneries (the company is famously vertically integrated, preferring to rely on no outside partner to make the leather it uses in its shoes). The research and development centre of Ecco's tannery division has also worked on technology to reduce the impact of fleshings on its overall waste management; it puts a figure of around 20% by weight of each raw hide that passes through its four main tanneries, in Indonesia, Thailand, China and the Netherlands. The new technology consists of a 'flesh to fuel' plant at the tannery in Indonesia, which extracts tallow from the animal protein and waste water associated with it and turns it into a biofuel that powers a specially modified boiler to provide hot water for the tannery.

Ecco says this has significantly reduced its use of diesel and the carbon emissions associated with burning it at the Indonesian facility. Another important environmental plus from this process is that it has reduced waste from fleshings going into landfill by 50%.

"We're always looking for ways of reducing our impact," says senior brand manager at Ecco USA, Dan Legor, "and Flesh to Fuel has worked well. It's part of our company philosophy; it goes back to our work with yak leather to support

livestock farmers in Tibet. It's hard stuff to work with, but it has three or five times the tensile strength of cow leather and we have leather running shoes made from it. Another way of reducing our impact is to try to reduce the amount of chrome we are using. I know the debate about this is ongoing, but even products we have such as footbeds made from vegetable tanned leather go down well."

Scottish pride

In 2008, the Scottish Leather Group set up its own specialist technology subsidiary to work on IT projects, health and safety issues and other technology ideas across the group, which also includes tanneries in Paisley and Glasgow.

Together, the SLG facilities process 900,000 hides per year, 95% of them from the UK and Ireland, more than 50% of them from Scotland. "We're proud of that," says the managing director of Bridge of Weir Leather, Iain McFadyen. "There is a quality question connected to this, but we are also proud of our sourcing strategy because it means the minimum number of hide miles."

However, just like at Ecco and all other tanning companies, these hides also generate solid waste. The new thermal energy plant, one of the first projects SLG Technology began working on, is an attempt to manage that waste.

Mr McFadyen explains that it's part of a wider group effort to minimise impact on the environment. "We're aiming for zero waste," he says, "and to be self-sufficient in energy at the Bridge of Weir site. We already had a low carbon footprint because our hides spend so little time on the road

and we've just taken it lower. What we're doing is environmentally sound and that's why we feel entitled to market our products as low-carbon leather."

Solid waste from all of the group's Scottish facilities (its joint venture operations in China and Mexico are beyond the scope of the project) is transported to the thermal energy plant and, in a similar set-up to Ecco's in Indonesia, is used to supply hot water for use in tanning hides and to create heat for use in drying operations. Generating heat accounts for around 60% of energy consumption at the Bridge of Weir site at the moment. The fleshings also produce oil that the company is currently selling to customers in other industries, principally as a lubricant for the petrochemical industry or as a component of commercial biofuel products.

The Scottish Leather Group's environmental director, Dr Warren Bowden, has been working on this idea for some time and is happy to see it come to fruition. He thinks the group, which he joined in 2008, has shown great courage and commitment to this cause, not least by funding the entire project on its own. He backs up Iain McFadyen's contention that SLG was already taking important strides in environmental management, having improved its energy efficiency by around 20% in the last seven years. "The thermal energy plant will improve this by a further 50% across the group," he says, "and, as Iain has said, we are aiming to be energy self-sufficient, ideally by 2015. We feel we are miles ahead of our competitors in this, but it's hard to quantify as so few tanning groups publish their figures on carbon emissions and energy consumption."



Ecco says fleshy tissue represents approximately 20% of the weight of the raw hide. The company is converting this material into biofuel.

CREDIT: ECCO



The equipment at the Indonesian tannery that Ecco is using to convert fleshings into fuel.

CREDIT: ECCO

Simple idea

In spite of the years of hard work, he presents the basic idea in simple terms: waste is a source of energy; if you convert your own waste into energy your need to use fossil fuels diminishes and you lower your carbon footprint.

SLG has described the £6 million investment as a big entry cost for a group employing 500 workers and turning over £65 million a year, and it calculates that it will take six-and-a-half years to achieve payback. If energy prices go up substantially, payback will be sooner.

Group chairman, Jonathan Muirhead, explains that the marketing of SLG's low-carbon leather has already begun. The term applies to finished leather and to wet blue that other tanneries will be able to buy, finish themselves and then present to their own clients as a low-carbon product. He explains that the group's customers in the automotive industry have been "most receptive" to this. "They are under the public spotlight over the environment," he says, "because cars emit gas and consume fossil fuels. The car industry wants to show that it's making a serious effort. Suppliers that can support that will reap benefits; they will be on the specification lists."

The earlier reference to having already picked up new business thanks to low-carbon leather relates to the new Fisker Karma, a plug-in hybrid luxury sports vehicle that has a range of 80 kilometres on one full electric charge, which Fisker Automotive says is more than most people drive each day. Recharged each night the Karma may never use petrol. Beyond 80 kilometres an efficient gasoline engine will

kick in and run for an additional 400 kilometres on a full tank of fuel.

"Fisker heard about what we were doing and we became an obvious choice for them," Mr Muirhead says. "Other car manufacturers are hugely interested; four or five of them travelled to Scotland for the opening of the thermal energy plant." The idea is also generating interest in China, where, as mentioned, SLG has a joint-venture operation. The Bridge of Weir Leather Company set up a partnership with Zibo Polygrace Dahuanjiu Tannery Group, from Shandong province, in September 2009 to set up a new automotive leather finishing, testing and

cutting facility in China. Contacts in China have already expressed interest in seeing the thermal energy plant and, although the Scottish Leather Group says it wants to retain the intellectual property behind it for some time yet, it is happy to "share what we can".

Alternative materials

Non-leather alternatives are common in the automotive industry today, of course, but SLG points out that these alternative materials would not exist without fossil fuels, whereas leather can. Car companies looking for ways to lower their carbon footprint could gain a lot from choosing leather over synthetics for their interiors.

For Dr Bowden, the continuing use of fossil fuels will make the lower carbon debate difficult in any context. He says: "Fossil fuels are driving the carbon imbalance. Avoiding fossil fuel is the whole story, and if you have fossil fuels as the basis for your product, you have a problem."

His chairman points out that leather production has been a polluting industry, but examples such as his group's new thermal energy plant and Ecco's Flesh to Fuel programme show that it is possible to keep coming up with green initiatives to improve the environmental performance of the leather industry. "It is possible to make leather more environmentally sound, to stop dumping so much waste," Mr Muirhead says. "We have done it; there will be no waste here, it's something we're overcoming." ☉



New luxury hybrid car the Fisker Karma. Low carbon leather from the Scottish Leather Group was considered an obvious choice for the interior.

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