

# New from old

A process which will see low grade textiles turned into new garments is being developed by Dutch organisation Textiles 4 Textiles. Haydn Davis reports.

A European Union project has developed a machine which can automatically sort unwearable textiles by chemical composition and colour, creating a new market for low-grade textiles. The textiles are then shredded and spun into new threads, which are woven into new textiles for use in making new clothes.

Work on Progress is the group responsible for communicating the technology. Speaking at the recent Department for Environment, Food and Rural Affairs sustainable clothing roadmap conference, Work on Progress partner Ellen Van Den Adel explained that half the textiles collected in the Netherlands cannot be re-worn and so must be recycled, the percentage is similar in the UK.

She added: "We can only earn money with the top 50% which is being sold and being re-worn in different markets but the bottom 50% costs money, which means that the sorting costs are more than what we gain once we've sold it." The new process is expected to address this problem.

Currently, sorters do not know the different compositions of low grade material. For UK sorters there is no need for this information, as most of this material is made into industrial wipes. However, Textiles 4 Textiles has developed a sorting machine using funding from the European Commission's Eco-Innovation Programme, which separates the lower grade material into mono-streams using

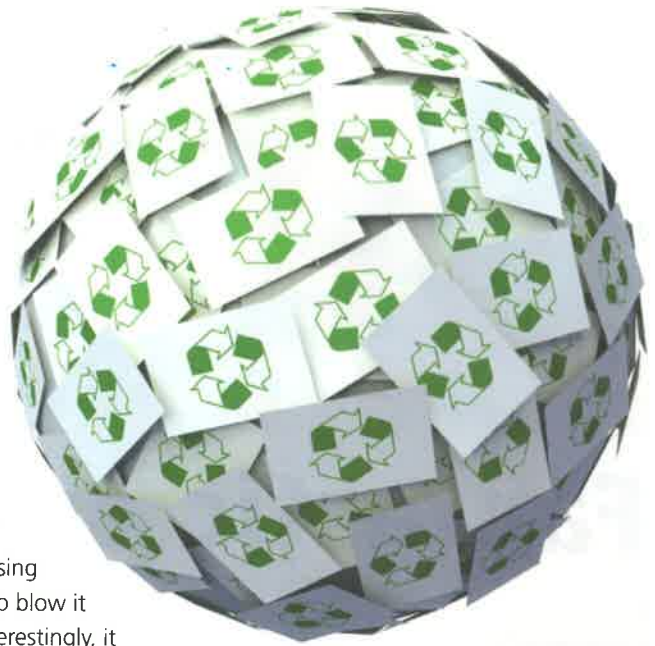
near infra-red technology. This will determine what the material is made out of and what colour it is, using air-stream technology to blow it into the correct bin. Interestingly, it should be able to sort textile materials on different fibre composition (ie, cotton, wool, polyester, blends).

It is thought the machine would be capable of sorting 4,000 tonnes of textiles each year. New thread is then made from a shredding process to make new garments and household textiles such as curtains and carpets. Shorter fibre material will then be used for insulation and automotive applications.

## Denim trials

Now, having trialled the process using cotton, which is the hardest material to recycle due to its short fibre length, Textiles 4 Textiles hopes to make an industrial-scale machine. If successful, over time several machines are expected to be in place across Europe.

Van Den Adel added: "Cotton and jeans are very popular products and if you can do it there you can do it anywhere, so we started with the most difficult material. [The garment] was not completely made from recycled fibre. Ten per cent of [a pair of] jeans can be made from [this type of] recycled fibre and in a year or a year and half this could go up to 20 per cent." (*Editors note: higher blends of recycled cotton content in denim have already been achieved from pre-consumer textile waste elsewhere.*)



Year	1960	1980	2005
Percent of textile recovered in the U.S.	2.8%	6.3%	15.3%

Source: Environmental Protection Agency, USA.. Municipal Solid Waste Generation, Recycling, and Disposal in the United States.

Responding to the news of the new technology textile collector and sorter LMB director Ross Barry said: "This would make it easier for textile collectors if it means clothing is upcycled into new clothing. The flocking market, which takes a lot of the lower grade material, can only take so much so this would open up a new market. It would also make sorting a lot quicker, stopping people from stockpiling material. It just depends on how economical it is to do."

Textiles 4 Textiles is currently working with a European brand of jeans to integrate the recycled material into their garments. ■

The UK generates approximately 1.5 - 2 million tonnes per annum (2006) of clothing waste. Of this 63% (1.2 million tonnes) enters the household waste stream going to landfill, 16% (300,000 tonnes) is recovered and 21% unaccounted for in what is assumed the "national wardrobe".