Worn out clothes can reclaim profits

As the number of fashion cycles increases and consumer demand for low cost clothing grows, what happens to these garments once they reach the end of their fashionable life?, asks Fiona Kelday.

Over the last decade the price of new clothing entering the UK market from low labour cost countries has been declining rapidly, a situation which has been exacerbated following the end of the World Trade Organisation's Multi-Fibre Arrangement in January 2005.

This is lowering the price being realised for the resale of wearable clothing in secondary markets and these factors are likely to contribute towards a decline in the UK's secondary textile industry with consequent significant environmental and social impacts. The textile recycling industry has, to date, existed largely without intervention but there are now calls for the introduction of measures to sustain and increase recycling levels, particularly of low grade materials with negative resale values. So what are the options for effective intervention and what market opportunities are there for recycled low grade clothing?

In order to address these issues a consortium of companies[1] recently completed a 12 month Defra funded study entitled 'Recycling of Low Grade Clothing Waste,'[2] currently under peer review and due to be published soon. The report integrates an economic and market analysis of the UK textile recycling industry with a study of technical and market developments aimed at developing new markets for recycled grades of clothing. Possible economic instruments and policy interventions are also proposed, based on optimum financial and environmental impacts, which could further develop secondary textile markets.

The findings from the economic and market study verify the secondary textile industry's perceptions of the adverse long-term economic and market situation and the negative impact of the termination of the Multi-Fibre Arrangement on the UK market. The report states that in the long term this will impact upon the secondary textiles market due to falling prices of new clothing coupled with a reduction in the quality of used clothing being collected. This has the twin effect of placing higher volumes and lower qualities of used clothing on the market, driving the price of used textiles down. Charity shops have already responded by moving into the sale of alternative used products (e.g. books) and into new products (e.g. fair trade). Some textile merchants have closed down sorting activities in the UK and are now shipping unsorted material directly to overseas traders or to sorting operations in low labour cost countries.

Figures from the report with regard to market dynamics conclude that 1.8 million tonnes of new textile products (this includes clothing, footwear, household linens, and carpets) and a further 50,000 tonnes of used textiles were consumed by the UK market in 2003. Of this, over 300,000 tonnes (17%) were collected by the secondary textile industry and 1.2 million tonnes (63%) were disposed of to the waste stream by consumers and the industry. The balance of 400,000 tonnes is unaccounted for, and is therefore presumed not to have been discarded but to be increasing the total stocks of clothing and other textiles held by householders: in what has now been termed as 'the national wardrobe'. Over time, the quantity of textiles that can be stockpiled is limited by available space. Given this fact, and the likely increase in new clothing

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sales, the study concludes that the quantity of used textiles entering the waste stream will increase in the medium term.

A portion of collected clothing is resold for re-use as clothing in the UK, the majority of which is likely to return to the waste stream after re-use. In 2003 only 260,000 tonnes (14%) of the apparent consumption were diverted from the UK waste stream, through recycling into new products or by being exported for resale and/or recycling. The conclusion is that there is a large recycling opportunity for both the industry and Local Authorities which could be exploited, subject to the availability of markets.

Impact of carbon dioxide

In terms of the carbon dioxide (CO_2) impacts of waste disposal choices, the report finds that the re-use of clothing is by far better than recycling or disposal, although much of the CO_2 benefits occur outside the UK. Recycling is significantly better than sending textiles to landfill and energy recovery, and, compared to other components in the household waste stream, the CO_2 benefit of textile recycling versus disposal is second only to that of aluminium. Charity shops and the textile recycling industry therefore have a substantial environmental benefit, displacing up to 8 million tonnes of CO_2 per year, albeit not in the UK. Changing consumption and disposal patterns of consumers are highlighted in the study and it is suggested that this may be reducing the number of cleaning cycles that clothing is subjected to, although more research is needed to clarify this issue. If this is the case, policy intervention would need to be directed at the production and re-use/recycling phases as well as at efforts to make washing and drying more energy efficient.

In practice, the most common process for recycling of fibres involves the material being shredded or pulled apart into small fractions and fibres. These can be combined with virgin fibre, which is then garneted, carded or airlaid to homogeneously mix the fibres and to produce a web, which is the pre-cursor for various textile and nonwoven materials.

There is a significant UK nonwoven presence in traditional recycled textiles market supplying mattress/upholstery, carpet underlay and automotive markets, although these traditional markets for recycled textiles are mature and offer very little opportunity for added value. The report suggests new markets for nonwovens made from a range of low-grade clothing, which might otherwise be sent to landfill, creating high value-added products consisting of up to 100% recycled waste materials as well as blends with functional materials (e.g. activated carbon). Feasibility has now been established and a number of applications have been identified for the nonwovens produced. Sample materials have been produced and reviewed by a number of potential customers in a diverse range of industry sectors and this collaboration is continuing with a view to developing new higher value added markets.

As for policy recommendations, compulsory extended producer responsibility measures are shunned in favour of voluntary measures driven by industry in order to promote re-use and recycling. The extension of recycling credit payments by Local Authorities to include all textiles re-use and recycling activities has also been recommended.

So while the market for new low priced textiles may continue to expand at the expense of UK manufacture, with early action there can be opportunities for textile re-use and recycling for manufacturers and retailers alike.

Table 1. Consumption and Disposal of Textiles in the UK.

	'000 tonnes	'000 tonnes	% of New Consumption
Apparent consumption of new textiles	1,812	—	—
Imports of used textiles	12	—	—
Consumption of used textiles	41	—	—
Total Consumption	—	1,865	100%
Textiles entering the household waste stream	—	**1,165**	**63%**
Textiles collected for resale and recycling	324	—	17%
of which:	—	—	—
Resale for re-use in the UK	41	—	—
Exported for resale for re-use	174	—	—
Recycled in the UK	62	—	—
Exported for recycling	26	—	—
Rubbish, returned to waste stream	21	—	—
Net textiles diverted from waste stream	—	**303**	**16%**
Textiles unaccounted for	—	397	21%

[1] Oakdene Hollins Ltd., Salvation Army Trading Company Ltd. and Nonwovens Innovations and Research Institute at Leeds University.
[2] Defra project reference WRT152 'Recycling of Low Grade Clothing Waste'

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