Recycled Wool

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As a naturally durable fibre, wool offers many opportunities to keep a wool product in circulation for a relatively long period of time, thereby reducing the product's environmental footprint.

Research by the Centre for Colour and Textile Science at Leeds University has shown that wool products have the potential for two or more uses or 'lives' and a total 'active life' of 20-30 years.[1,2]

The same research shows that wool already is one of the most re-used of all fibres, accounting for up to 5% by weight of total clothing donated by consumers for recycling and re-use. This is substantially higher than wool's share of the virgin fibre supply, which is about 1.1%[1,2]

Wool is Readily Recyclable

Due to its durability and quality, the wool fibre has been recycled for over 200 years. There are various forms of wool recycling:

1. Closed loop system. This is a mechanical process through which garments are 'pulled' back down to the raw fibre state and re-used as a raw material to make yarn again, producing garments with a very high economic value. Wool knitwear is particularly well suited for this process and can yield yarn with which a new garment can be created.

2. Open loop system. Here the wool product becomes the basis for industrial products such as insulation or mattress padding. These products can also have a very long life.

3. Re-engineering: More and more companies recycle their old or unsold products into new products. For example: creating a bag out of an old wool jacket. The same is done using waste collected during production such as trimmings, which get manufactured into other products.
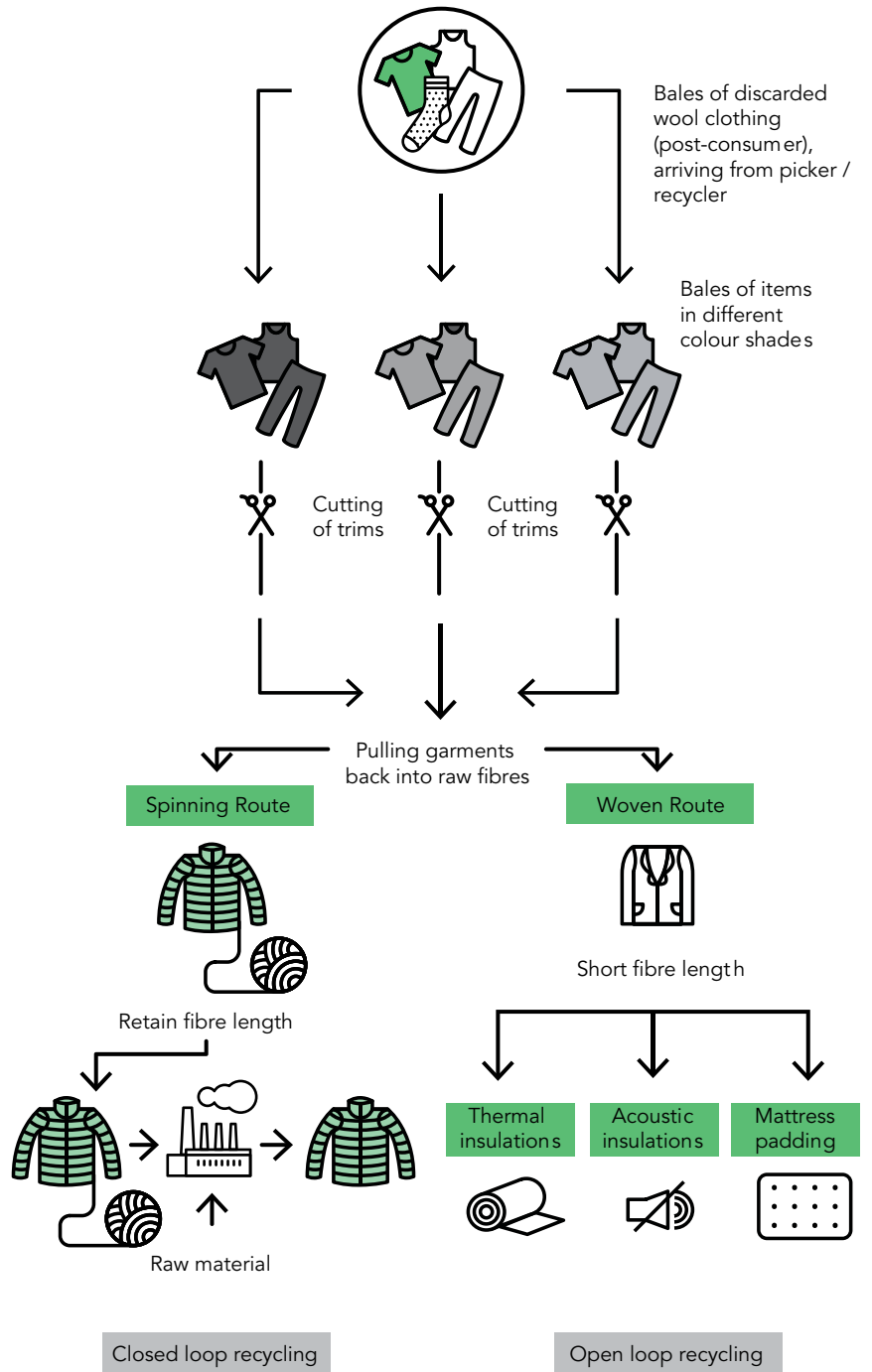
Wool = Less Waste

Discarded clothing is a growing problem. In the UK, a 2016 survey conducted by a supermarket chain revealed that 75% of consumers throw away used garments, instead of reselling or recycling them.[3] The U.S. Environmental Protection Agency estimates that more than 16 million tons of used textile waste is generated each year in the United States, and the amount has tripled over the last 25 years.[4]

Choosing long-lasting, readily recyclable wool over other fibres can help reduce the amount of textile waste in landfills.

Before Recycling, Reuse

Reuse extends the active lifetime of a garment, which generally results in a better outcome for the environment (and the bank account). Whether commercial second-hand or charity shops, online resale platforms or the increasingly popular clothes swap, there are numerous ways to reuse. Many covetable vintage garments are made out of wool!

INTERNATIONAL WOOL TEXTILE ORGANISATION IWTO

www.iwto.org

Wool Recycling

IWTO | Recycled Wool

Bales of discarded wool clothing (post-consumer), arriving from picker / recycler

Bales of items in different colour shades

Cutting of trims

Cutting of trims

Pulling garments back into raw fibres

Spinning Route

Woven Route

Retain fibre length

Short fibre length

Raw material

Thermal insulations

Acoustic insulations

Mattress padding

Closed loop recycling

Open loop recycling

Mechanical recycling of wool textile garments based on open and closed loop recycling (Russel et ak. 2016)

1 How old wool garments make new ones better: Prof. Stephen Russell, Director of Nonwovens Innovation and Research, Leeds University, United Kingdom. Presented at IWTO Congress in Harrogate, 2017, and A Second Life for Wool Clothing: Prof. Stephen Russell, Director of Nonwovens Innovation and Research, Leeds University, United Kingdom. Presented at IWTO Congress in Cape Town, 2014.
2 Russell S., Swan P., Trebowicz M., Ireland A. (2016) Review of Wool Recycling and Reuse. In: Fangueiro R., Rana S. (eds) Natural Fibres: Advances in Science and Technology Towards Industrial Applications. RILEM Bookseries, vol 12. Springer, Dordrecht https://doi.org/10.1007/978-94-017-7515-1_33
3 Seven of 19 discarded items of clothing will not be recycled – Sainsbury survey: Sunday Post, 06 April 2017. https://www.sundaypost.com/fp/seven-of-19-discarded-items-of-clothing-will-not-be-recycled-survey/ (retrieved 14/11/2017)
4 United States Environmental Protection Agency: Facts and Figures about Materials Waste and Recycling. https://www.epa.gov/facts-and-figures-about-materials-waste-and-recycling/textiles-material-specific-data