

How Wool Reduces Climate Impact

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The use phase is one of the main stages of a product's life cycle. This is the time when a consumer owns, wears/uses, washes and cares for a garment.

Research shows that how we use a garment differs depending on its fibre content. To understand the true environmental impact of a garment, the use phase must be considered.

There are a number of reasons why using, wearing, and caring for wool is very different from other fibres and can make a real difference toward reducing environmental impact.

Wool is Washed Less Often

In a study of global apparel consumer use phase data, researchers analysed the number of times clothes are worn before they are washed. Wool was found to be worn more times prior to washing than other fibres.

This saves energy and water, as well as time.

Why can wool clothes be washed less frequently?

The natural properties of the wool fibre include odour resistance and resilience (meaning, it will retain its shape for longer and regain its shape after being worn). Wool garments can be refreshed simply by hanging them to air. You can hang garments in fresh air or the bathroom while you shower, where the steam will release wrinkles.

Typical use phase characteristics for cotton and wool items

Product category	Unit weight (kg)	Fibre	Wearing per wash	Garment wear life (years)	Wearings per lifetime (number)	Washings per year per unit
	assumed	example	Laitala et al Table 6	Laitala et al Table 8	Cotton Inc data	by derivation
Socks	0.05	Cotton	1.5	3.3	52.3	10.6
	0.05	Wool	2.5	5.5	52.3	3.8
T-shirt (baselayer)	0.2	Cotton	1.5	4.6	36.4	5.3
	0.2	Wool	3	4.6	40.5	2.9
Sweater (mid/outer)	0.3	Cotton	5	5.6	81.4	2.9
	0.3	Wool	10	6.0	92.4	1.5



Wool is Washed at Lower Temperatures

Washing at lower temperatures means less energy use per washing cycle. A German consumer behaviour study found that consumers wash wool at 30.3 °C on average compared to cotton at 41.1°C on average.³

Wool Dries on the Line

Tumble-drying wool is usually not recommended as the mechanical friction is not good for the fibres. So, most wool garments are line-dried. This is great news for the environment as dryers use more electricity while line drying in the open air uses none – which is also great news for your electricity bill.

Wool Garments Can Have Longer Lifespans

The longer a product is used, the less impact it has on the environment, as all of the costs of making it are distributed over time and no other resources are used to replace it.

Wool garments often last longer than those of other fibres due to the garment quality and potentially because of the lower washing frequency.

Provided woollen garments are put to good use, environmental impacts can be lowered, and fewer new garments need to be purchased.

Wool Does Not Contribute to Microplastic Pollution

This could possibly be the most important reason of all. All textiles shed fibres, but wool fibres biodegrade in soil and water (salt water as well as fresh) and do not contribute to microplastic contamination.

Read more about how wool biodegrades in Fact Sheets [Wool is Biodegradable](#) and [Wool in Aquatic Environments](#).



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¹ Laitala, K., Klepp, I., and Henry, B. (2018), "Does use matter? Comparison of Environmental Impacts of Clothing Based on Fiber Type", *Sustainability*, 10, 2524.

² Idem. Note that data for synthetics and man-made cellulosic fibres is not currently available.

³ Berkholz, P.; Brückner, A.; Kruschwitz, A.; Stamminger, R. *Verbraucherverhalten und Verhaltensabhängige Einsparpotentiale Beim Betrieb von Waschmaschinen Leicht Geänderte Fassung einer Studie Durchgeführt im Auftrag des Bundesministerium für Wirtschaft und Technologie (Bmwi—Projektnummer: 86/05 az: I a 2—00 09 80)*; Shaker-Verlag: Aachen, Germany, 2007.