



GEMEINSCHAFT
**FÜR TEXTILE
ZUKUNFT**

High-quality recycling of used textiles

The interest group

**“Gemeinschaft für textile Zukunft”
(Future of Textiles Association)**

advocates the sustainable use and high-quality recycling of
used textiles.

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Founding members of the Future for Textile Association:



With its Europe-wide collection and recycling in seven sorting plants (i.a. in Bremen), the **Boer Groep** has assumed textile responsibility for over 50 years and sorted approximately 100,000 tons of used textile per year. (www.boergroup.nl)



Jean Bilshheim Textil GmbH in Creußen (Bavaria) has the know-how to solve today's disposal problem. It is a sorting company for used textiles. For more than 75 years, **Jean Bilshheim Textil GmbH** has been active in the recycling business. (www.jean-bilshheim.de)



With locations and participations in 8 countries, **SOEX Group** is a globally leading company in the commercialisation and recycling of used textiles. In Germany, it operates the advanced **Sortier- und Recyclingwerk Wolfen** (Saxony-Anhalt), where roundabout 90.000 tons of used textiles per year are sorted. (www.soexgroup.com)

Founding members of the Future for Textile Association:



TEXAID is one of Europe's leading organisations for environmental collecting, sorting and recycling of used textiles. In accordance with ecology and economy, TEXAID plays an important part in contributing to keeping used textiles in the value-added chain for as long as possible. (www.texaid.de)



Highly professional service provider in all areas of textile collection, processing, marketing and recycling for more than 25 years. (www.geotextrecycling.com)



Collection of used textiles, sorting and marketing from one source! With our large competence and responsibility, we support a second life for used textiles for almost 30 years. (www.ewtk.com)



Used textiles has always been an important resource ...

... not only for carrying further the well preserved, but also for winning new resources for new products.

Since as far back as the 13th century, “rag pickers” provided important resources for paper mills. With the development of reprocessed wool plants, the very first recycling systems have been created in the course of the industrial revolution. Used textiles were a valuable good, particularly in times of need during the 20th century. As a result, used textiles were collected by charities since the 1950s in order to meet the local and global need for well preserved used clothing.

Nowadays, regional trading with used textiles became a global market. For reusing the highest possible percentage of the waste collected, modern plants perform complex sorting. However, one thing has not changed: Sorting and examining of used textiles is manual labour that cannot be replaced by any machinery!

Used textiles require careful handling when it comes to collection and sorting. Unlike collected mix like lightweight packaging and paper, sustainable used textiles are reused to a large extent after being sorted.

Over 70% of the world population uses second-hand clothing¹ ...

... can this need be met by primary raw material?

For every reused textile, necessary resources and harmful substances are being saved during the primary production. The selected examples below serve to illustrate this:

- Besides the extremely high space demands² (67 ha per ton), the production of 1 kg cotton fibres requires approx. 22,000 to 25,000 litre water.³
- Cotton production requires approx. 11% of the total use of pesticides and 25% of the total use of insecticides worldwide.⁴
- About half of the fibres being used for textiles are produced from fossile.⁵
- (Preparation for) Reusing a t-shirt alone saves 2,5 kg CO₂-eq.⁶

Reusing used textiles is a crucial part for conserving resources, saving energy, reducing water consumption and minimising the use of harmful substances.

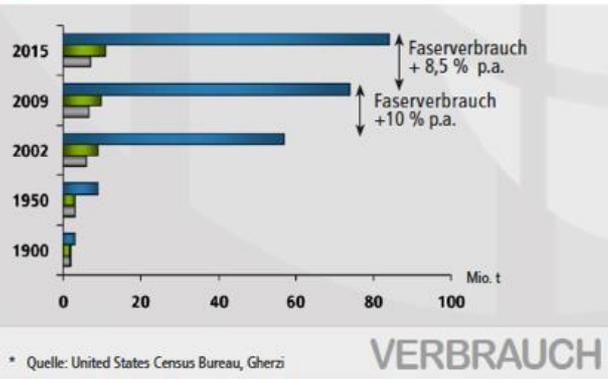
Reutilisation abroad does not compete with local economies but instead allows an affordable access to high-quality textiles.



Fibres– Consumption, Composition and Environmental Impact

Produktion

Tabelle 4 Verbrauch von Textilfasern in Mio. Tonnen weltweit 1900 - 2015



1980 haben sich Natur- und Chemiefasern den Weltmarkt zur Hälfte geteilt. 2010 wurden weltweit nahezu doppelt soviel Synthefasern wie Naturfasern produziert. Grund dafür sind u. a. die steigenden Preise der Naturfasern.

Tabelle 5 Produktionsentwicklung von Textilfasern weltweit 1980 - 2010 in Mio. Tonnen / Jahr

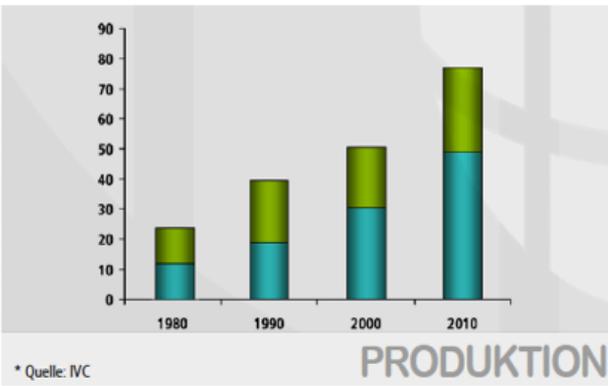
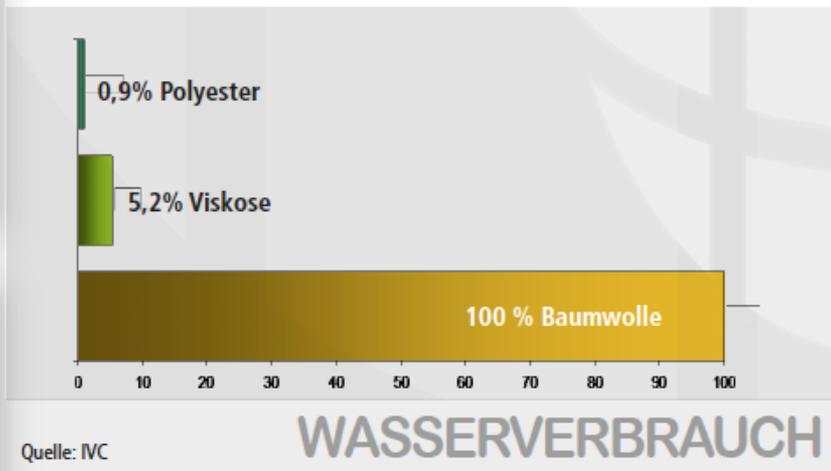


Tabelle 17 Prozentualer Wasserverbrauch für die Herstellung einer Tonne Fasern

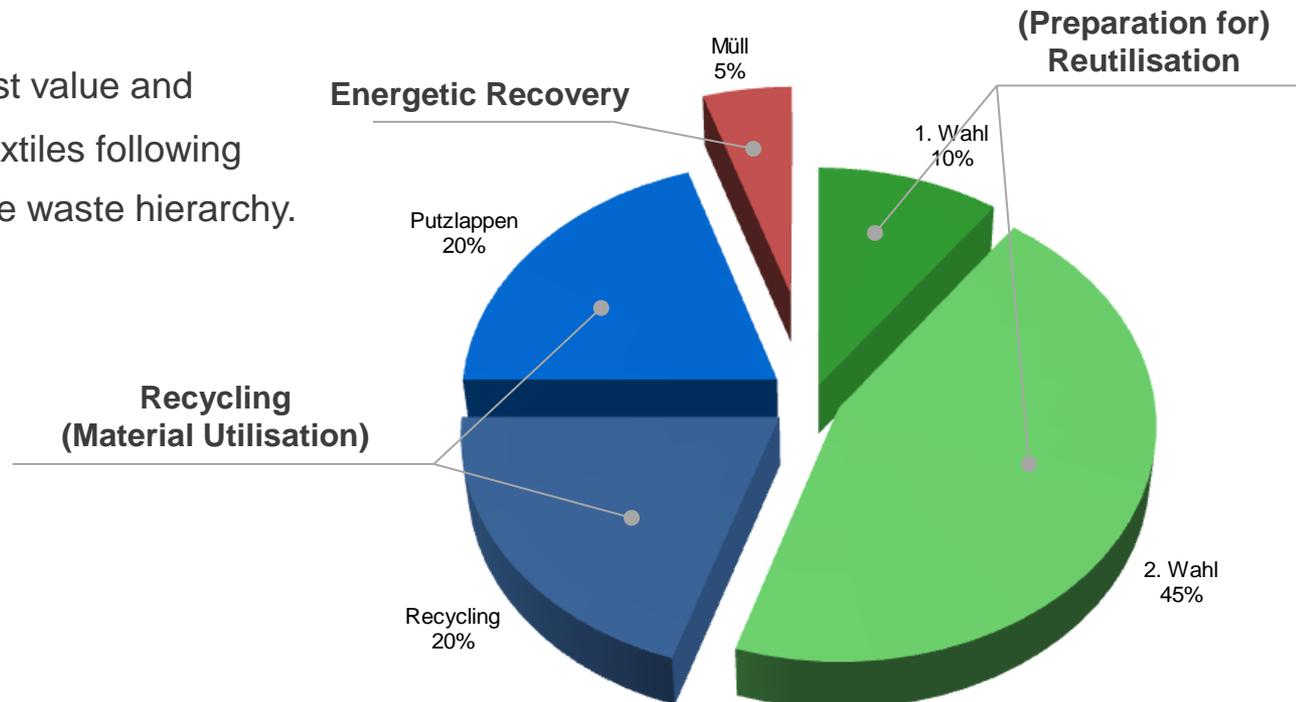




Contribution to Resource Protection in Germany

- Wearable used textiles and shoes are reused and sold as second-hand clothing afterwards.
- Not wearable used textiles are processed and recycled.
- Unrecyclable used textiles are processed with minimum energy.
- Residues and foreign matters are disposed properly.

The Aim is to achieve the best value and high-quality recycling of used textiles following the prioritisation according to the waste hierarchy.





Activities of the European Member States:

France

- EcoTLC: Extended Producer Responsibility since 2008 (www.ecotlc.fr)
- Aim: 100% reuse and recycling of used textiles

Nordic States

- Dismissal of “the Nordic Sustainable Textile Action Plan” in 2014

United Kingdom

- “Waste & Resource Action Program” (WRAP)
- Used textiles were classified as „priority stream“

Used textiles are not only a valuable good...

1.01 million tons of an estimated potential volume of 1.35 million tons of used textiles are collected, reused and processed every year. A study is currently conducted to update and specify this quantity.

Since the 1950s, textiles have been collected by charitable institutions in order to meet the local and global needs for well preserved second-hand clothing. In addition to classical door-to-door and street collection, an extensive, stationary container collection system established itself in the 1980s. The parameters and market structures have changed considerably since mid 2012 with the commencement of the Recycling Law and the declaration of used textiles as waste*.

In practice, legal possible options for handling used textiles are not only exploited in market competition, but they are also exceeded in many cases. This leads to a series of negative impacts on the market and the environment.



...used textiles are worth to be recycled with high-quality after all!

In tendering procedures, professional bases for describing competently legal requirements for the recycling of used textiles are often missing.

This leads to

- the possibility of market entry for suppliers with collecting and processing methods that do not comply with the Law on Life-Cycle Management and
- not being able to guarantee high-quality sorting and processing of used textiles (pursuant to the applicable waste hierarchy) anymore.



	2007		2013	
	[%]	[t]	[%]	[t]
National availability	-	1.126.000	-	1.347.457
Amount collection share	-	750.000	-	1.010.988
by containers	80 %	600.000	88 %	889.669
by street collection	20 %	150.000	9 %	90.989
other	-	-	3 %	30.330
Recovery* share	-	750.000	-	1.010.988
Re-use (second hand)	43 %	322.500	54 % (66 %)	545.934 (667.252)
Recycling (second use)	16 %	120.000	21 % (16 %)	212.307 (161.758)
Recycling (material)	31 %	232.500	23 % (16 %)	232.527 (161.758)
Disposal	10 %	75.000	2 %	20.220
Recycling quota	90 %	-	98 %	-
Recycling quota (basis availability)	60 %	-	74 %	-

* Data in brackets = potentially achievable

According to the Law on Life-Cycle Management (KrWG) section 3, para. 1, sentence 1 and para. 2, used textiles from container or street collection are considered waste.

Practice shows that there is a huge difference in when and after what treatment used textiles are seen as waste. In principal, the in section 6 of KrWG mentioned waste hierarchy needs to be followed during the recycling of waste.

Waste of used textiles from container or street collection contains wearable as well as non-wearable used textiles due to pollution and damage. Additionally, it can also contain additives and impurities that were falsely disposed (by mistake) over this channel by residents.

For this reason, suitability of reuse or other utilisation, material recycling if possible, can only be identified for each single used textile within collected waste. This will be carried out properly within the sorting process.

GftZ conforms to these legal fundamentals.

Classifying used textiles as waste is an important basis for proper and sustainable handling of heterogeneous material stream. In practice, the legal requirements must apply for all market participants in the same way.

5-stage waste hierarchy: According to the waste hierarchy's aims (§ 6 KrWG), whenever waste cannot be prevented, it must be prepared for reuse or recycled. Only in the final position of the waste hierarchy disposal is an option. In this respect, § 14 KrWG standardises an obligation for separate collection already at the collection point.



In the narrow sense, **preventing** textile waste means limitations in production and consumption (as in all other waste flows). High quality of the good is especially important when it comes to textiles. More and more low quality cheap goods with a very short life span constitute the assortments. An important part of avoidance is the longest use possible of the textile during the first use phase, and being aware of further use (e.g. by passing on, giving away or selling the item).



According to KrWG, **preparing for reuse** stands for every recycling method like examination, cleaning or reparation in which the products or components of products, that became waste, are prepared in order to be reused for the same purpose as before without further treatment. Preparing for reuse is accomplished through sorting used textiles. Within sorting, impurities are not just removed, but usability and marketability has to be decided for every single item. Sorting used textiles represents the only method in the field of waste management that prepares waste for reuse in relevant aspects.



According to KrWG, **recycling** stands for every recycling method that processes waste into products, materials or substances either for the original purpose or for other purposes; it includes processing of organic materials that are intended for the use as fuel or for filling. The term recycling applies to used textiles that were categorised as non-wearable and non-marketable (due to being dirty, damaged, wet) after examination. These will then be used as cloths and/or pulled textile.

According to KrWG, other **recovery**, especially energetic recovery, applies to used textiles that neither are suitable for reuse nor for proper recycling (as mentioned above). This also applies for miss-sorting and impurities that are not used textiles.

Disposal of used textiles is given if these are added to disposal methods. Since landfilling is not possible anymore in Germany and thermal methods are normally not considered as disposal, used textiles that are delivered to incineration plants cannot be considered as removed and must be considered as energetically recovered (see above). For exporting unsorted waste textiles, however, one has to expect that non-wearable and non-marketable goods will be disposed in ordered landfill or disordered dumpsites in the target country.



Reutilisation is an essential pillar for used textile processing

- Sorting of used textiles represents the only procedure that prepares waste for reutilisation to a relevant extent.
- According to the waste hierarchy, non-viable and non-marketable textiles are primarily recycled substantially. These materials are then used for instance in the motor and wiping cloth industry.

“Keeping the current and significantly different situation in Germany in mind, how is it possible to guarantee a high-quality, value-adding collecting and processing of used textiles?”

Since there are currently no particular requirements, the Future of Textiles Association takes the development and implementation of practical assistance for **collecting, sorting and processing** of used textiles on board as a crucial element.

The practical assistance define quality criteria regarding the processes in the recycling of textiles. “High-quality” and “harmless” procedures should be differentiated while “unsuitable” procedures would be shown. For this purpose, the practical assistance should name technical and organisational requirements for each particular processing step.

The primary guiding principles of the Future of Textiles Association reads:

During sorting, suitability for reuse or processing must be verified for each single textile. The sole removal of additives and impurities from the mixed waste (“negative-sorting”) is not sufficient in order to end waste characteristics of mixed waste.

“The higher the quality of the sorting, the better the utilisation/processing.”

Guidelines as the basis for all market participants

The following effects should lead to the implementation of practical assistance:

- specification of tendering procedures (with adaption of qualitative requirements for the collection and recycling of used textiles),
- transparency of mass flow (from location of collection to its destination),
- legal certainty of tendering procedures,
- implementation and guidance for audits,

The practical assistance should

- not interfere with the market, but instead ensure a better competition,
- fulfil the legally required 5-stage waste hierarchy and
- be accepted and supported by the decision-makers in the market and in the implementation.

Facing the textile future together

- The main function of the association is to further develop and specify these approaches in dialogue with all parties involved.
- The association is always open to dialogue with interested stakeholders about any questions regarding a sustainable textile future.
- The association will represent their activities and contents to politics and intuitions and will present them through public relations.

Research and Development

For the development of recycling activities and closure of loops, conceptual studies, sound information and technical innovation are required:

- Elicitation of resilient market data (material availability with respect to material types)
- Recognition and separation technologies (automated for the field of “unsustainable used textiles”)

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Further information about the association can be found here: www.textile-zukunft.de

Sources

- ¹ www.wasteonline.org.uk
- ² Industrievereinigung Chemiefaser e.V., www.ivc-ev.de
- ³ Engelhardt: The Fibre Year 2009/2010 – A World Survey on Textile Nonwovens Industry, 2010
- ⁴ Kooistra, K.; Termorshuizen, A.: The Sustainability of cotton, 2006
- ⁵ Engelhardt 2010, s.o.
- ⁶ WRAP: Benefits of Reuse, Case Study: Clothing, November 2011