

As far as the eye can see: jeans, T-shirts, and dresses from all over the world pile up in the Atacama Desert in Alto Hospicio, northern Chile. This photo was taken in 2022. For years, about 20 metric tons of used clothing that nobody wants anymore have been ending up here every day.



FASHION FOR THE FUTURE

TEXT: KATHARINA MAU

61

New regulations aim to promote the circular economy within the EU and reduce raw material consumption and waste in a particularly resource-intensive sector – the fashion industry. Antonia Sommerfeld from the Max Planck Institute for Comparative and International Private Law in Hamburg examines the legal framework necessary to enable a circular economy.

Can a single designer make a difference in the fashion industry? That's the question Reet Aus, an Estonian fashion designer, asks herself in the documentary *Out of Fashion*. She travels to Bangladesh, sees how jeans are produced for fast-fashion brands, and learns just how much waste is generated during production alone, either from fabric scraps or over-production. She begins collaborating with the factory she visits with the aim of producing clothing from fabric that would otherwise be discarded. It's upcycling

in grand style. Reet Aus hopes to team up with one of the major fashion brands so she can really make a difference, but it doesn't work out and a collaboration never materializes.

At the end of the documentary, Antonia Sommerfeld poses herself the question: why not? A qualified lawyer, Sommerfeld is a senior research fellow at the Max Planck Institute for Comparative and International Private Law and conducts research on the fundamental elements of the circular economy – a way to reconcile sustainability and economic viability. But what would it take for not just one or two suppliers to produce sustainable fashion, but for an entire industry to discover the potential behind the circular economy? She soon concludes that private law has the potential to change things on this front. It's

a perspective on the circular economy that has barely been explored.

To grasp the legal possibilities, it helps to understand the fashion industry's massive environmental footprint. Every year, the textile sector accounts for between two and eight percent of global greenhouse gas emissions across the entire value chain. It consumes significant amounts of water in the process – an annual amount that would fill 86 million Olympic swimming pools. That translates to about 115 bathtubs per person per year in Germany.

This is because our approach to clothing and other consumer goods follows a linear principle: produce – buy – wear (far too rarely) – and throw away. One possible solution to curb resource consumption without sacrificing →

profits for businesses or the economy is the concept of the circular economy. Broadly speaking, there are two sides to this concept: first, measures that slow down the cycle, and second, those that close it.

With regard to the fashion industry, that means designing and producing clothing so that it lasts a long time and can be repaired. It also means developing secondhand business models for the mass market – so that clothing one person no longer likes ends up in someone else’s closet and is worn for longer.

Closing the loop requires systems for turning old, damaged garments or fabric scraps into new clothing, either through upcycling or recycling. That means shredding scraps to recover the fibers from them and then using these to produce new materials.

Pioneering Work

62 Some fashion houses are already experimenting with circular business models. For example, Reet Aus, the Esto-

nian fashion designer, has followed through with her approach, producing clothing from leftover materials under her own label. She has also developed a certification program to share her knowledge with other manufacturers. Meanwhile, Belgian company HNST produces jeans made largely from recycled fibers. And they’re designed to be easily recycled themselves – for instance, you can simply twist off the buttons. The Italian fashion company Rifo recycles wool and cashmere fibers, and the Trützschler Group also processes fibers for reuse, to name just a few labels and companies.

The outdoor outfitter Patagonia offers a free repair service and sells used Patagonia clothing through its own online store. The manufacturer Napapijri has developed its “Circular Series” collection, with garments made from a single material rather than a blend. “Blended fibers are hard to recycle into clothing of equivalent quality,” says Burcu Gözet, who researches the circular economy in the textile industry at the Wuppertal Institute. “The process is much easier with monoma-

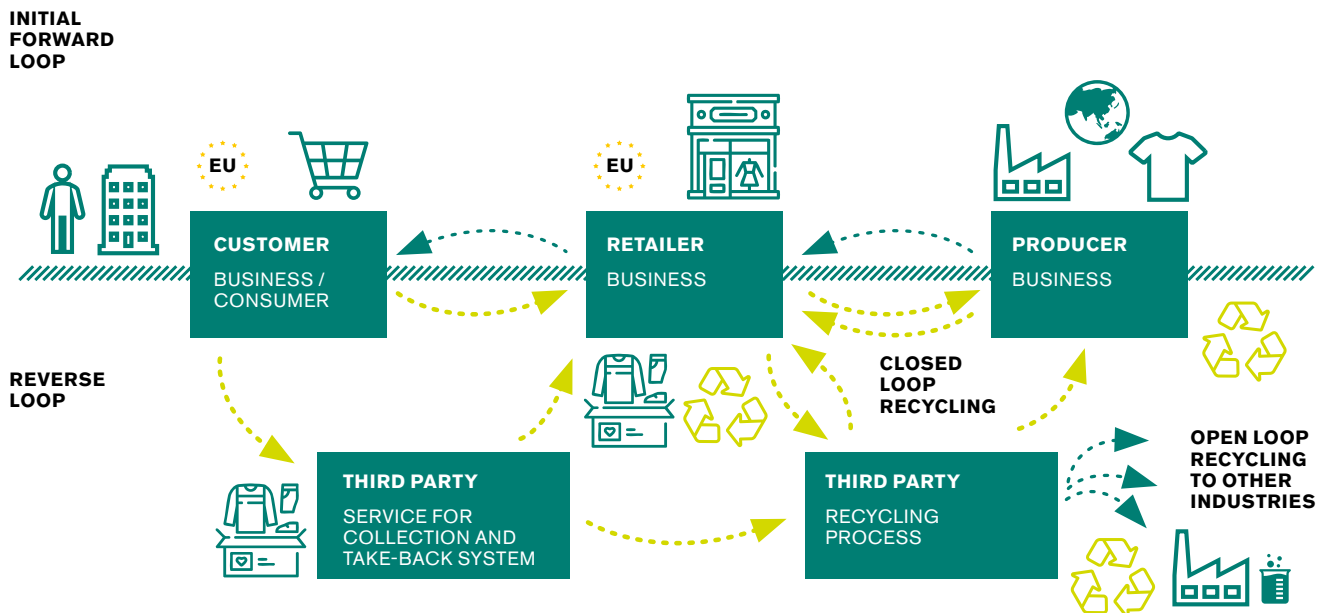
terials,” adds Sommerfeld, “and the technology is already more advanced.”

Yet despite isolated examples, circular business models are still far from reaching the mass market. Less than one percent of our clothing is recycled into new garments. Taken together across the entire world, people throw away a full garbage truck’s worth of clothing every second. Used clothing from Europe ends up mainly in Africa and Asia.

The fast-fashion industry produces as cheaply as possible and outsources many of its production steps to countries in the Global South – causing harm to people and the environment in the process. Yet in linear economic competition, businesses in this industry benefit. At the moment, circular products are often more expensive than linear products, whose negative environmental costs are not factored into their price. Nor does it make financial sense for companies to change. Circular business models therefore currently work only in niche markets – for companies with customers who value sustainability and have enough

In a circular economy, producers, retailers, and customers, as well as return systems, are all interconnected. For example, when clothing from collection points or containers ends up back at the manufacturer and they then refurbish it or recycle the fibers, the cycle is closed. In the fast-fashion industry, by contrast, the majority of discarded items end up in incinerators or landfills.

GRAPHIC: GCO BASED ON ANTONIA SOMMERFELD, VERÓNICA RUIZ AROU-NIGM



money and time to buy sustainable fashion or secondhand clothing. When a company like Patagonia offers a free repair service, this can help it to retain a specific customer segment for the brand. “But there is by no means a level playing field between linear and circular business models, which is currently hindering a circular transformation,” adds legal expert Sommerfeld. And that’s where legislation comes in. At present, it tends to favor a linear economy: the purchase of products is clearly regulated, for example, but companies are not obligated to take them back at the end of their lifespan. There are various different ways to help level the playing field for companies committed to the circular economy, ranging from a general take-back obligation for end-of-life textiles to tax incentives for circular products. “We are seeing some companies doing pioneering work, trialing circular business models and thereby implementing the model of the circular economy,” says Antonia Sommerfeld. “Our task, and that of policymakers, is now to consider how these models can be scaled in a way that is attractive and legally sound.”

Private Law as a Lever for Circular Fashion

So how can this be achieved? And how can a single country like Germany use legislation to favor circular products manufactured in international supply chains without disadvantaging its own economy? After all, different rules might apply to German companies and international companies. These are the questions Sommerfeld tackled together with her co-author Verónica Ruiz Abou-Nigm, a law professor at the University of Edinburgh, in their 2024 study. They run through a hypothetical example: a customer buys a garment at a shop in Berlin or from an online store targeting the German market. The seller is a Swedish company. The garment was manufactured by a producer in Bangladesh. The authors also imagine that Germany has introduced a new law: if clothing is labeled as circular, companies benefit from tax breaks. This

boosts the economic incentive and creates a competitive advantage. At the same time, this entails a responsibility for companies, who need to ensure that customers can return used clothing to the company free of charge and with minimal effort. In this way, the clothing can then be repaired, up-cycled, or recycled to its highest material value and reused.

SUMMARY

The fashion industry follows the model of the linear economy; fast fashion thus causes massive environmental damage, for example, through increasing textile waste.

Legal scholar Antonia Sommerfeld from the Max Planck Institute for Comparative and International Private Law is researching an alternative model: the circular economy.

While a few manufacturers are already leading the way by recycling or refurbishing textiles, Sommerfeld is exploring new legal frameworks that could make the circular model attractive to the entire fashion industry.

The circular model combines economic and ecological advantages, for example, through take-back obligations, tax incentives, and Extended Producer Responsibility in the EU.

If these rules applied only to domestic companies within the German market, these businesses would be at a disadvantage compared to international companies selling their products in the same market because they would be the only ones having to handle the return shipping and reuse of the materials. But this is where the EU’s private international law comes into play. It works like a signpost, explains Sommerfeld. It determines

which law applies and which court has jurisdiction for cross-border contexts. It ensures that all companies operating in a comparable manner on the German market are subject to the same regulations in their dealings with consumers. The same then applies in Spain, for example. Thus, disadvantages for domestic companies are specifically avoided. “In our case study, all companies wishing to sell on the German market would have to ensure that consumers can return used clothing easily and at low or no cost,” says Sommerfeld. This would apply to businesses in Germany, but also to online stores targeting the German market – be it Reet Aus, Patagonia, or future circular economy providers.

“We demonstrate that a national legislator can be bold and promote the transition to a circular economy,” says Sommerfeld. Ideally, such regulations would be adopted at the EU level, but individual member states could take the lead in this way without putting their companies at a disadvantage compared to foreign competitors. Circular economy approaches are also interesting because they can help with the achievement of national climate goals and make countries and supply chains less dependent on raw materials from abroad – an advantage not to be underestimated in times of geopolitical crises.

When Sommerfeld and Ruiz Abou-Nigm present their research findings at conferences, they are met with tremendous interest internationally. Sommerfeld is convinced: “The negative environmental impacts of the fashion industry are felt worldwide, particularly in the Global South, and the circular economy is a promising solution – both economically and ecologically.”

The EU is likewise seeking solutions. With its strategy for sustainable and circular textiles, it has set ambitious goals: by 2030, all textile products on the EU market shall be durable, repairable, and recyclable, and consist largely of recycled fibers. Since 2025, it has been mandatory in the EU to collect textiles separately, with local authorities obliged to provide →



Circular meets social: Antonia Sommerfeld in front of the raw materials used by the company Bridge & Tunnel in Hamburg, which, among other things, manufactures designer products from textile waste. In addition to ecological sustainability, the label is committed to social responsibility and provides a visible platform for socially disadvantaged women and refugees to become textile workers and talents.

64 dedicated containers for this purpose. In the future, this will apply as a general rule for worn-out clothing as well. While Berlin at least offers dedicated containers for this (albeit for a fee), in Munich the only option is to dispose of such items in the general waste bin. According to its statements, the district authority there is still awaiting a coherent and implementable overall concept. Another factor compounding the problem is that the quality of clothing is declining, particularly in ultra-fast fashion. This makes it ever more difficult to reuse or recycle.

Starting in July 2026, companies will no longer be allowed to destroy clothing, headwear, and shoes that they have not sold. According to the European Commission, they will instead be required to manage their inventory more efficiently and to prepare returns for resale or donate them. Furthermore, the European Parliament has adopted an Extended Producer Responsibility (EPR) scheme for companies selling textiles in the EU, which obligates them to pay for collection, sorting, and recycling. Member states must transpose these require-

ments into national law by mid-2028. “If the fees are structured so that companies producing non-recyclable clothing have to pay more, that would create an economic incentive,” says Burcu Gözet of the Wuppertal Institute.

Turning Old into New

The EU has introduced the right to repair not for fashion, but for devices like smartphones, tablets, or washing machines. The directive is to be transposed into national law by summer 2026 and will then apply in Germany as well. As yet, however, the EU has not introduced any obligation for companies to take back old clothing – in contrast to what the researchers propose and recommend in their publication. How this might work is also the subject of legal scholar Antonia Sommerfeld’s postdoctoral thesis. Her aim is to examine how German private law would need to be amended to support a circular economy – for example, through circular sales contracts, which also make companies and their supply chains more cri-

sis-resistant. This would include the proposed obligation for companies to take back their own products. In this way, they can recycle the raw materials used or refurbish and resell the garments.

German private law is based on the German Civil Code (Bürgerliches Gesetzbuch – BGB), the provisions of which first came into force in 1900 and largely remain in effect today. Over its 126-year history, it has witnessed many social and technological changes – and adapted accordingly.



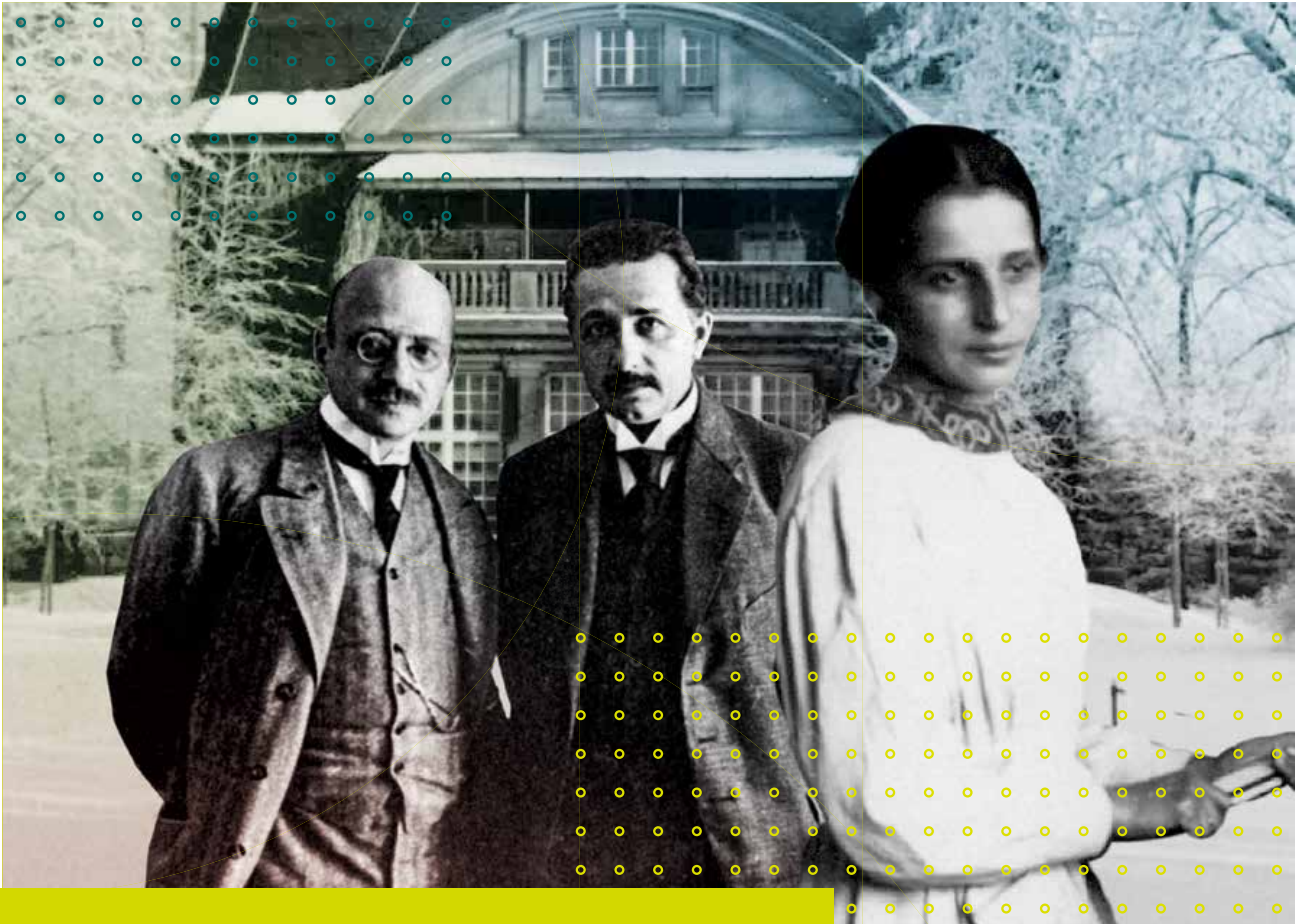
GLOSSARY

LINEAR ECONOMY

Describes the conventional form of economic activity. It’s also referred to in professional circles as the “take-make-waste economy.” Product life cycles have a clear beginning and end, and recycling or reuse is not, or only partially envisaged. The linear economy relies on a constant inflow of resources and continuously generates waste.

CIRCULAR ECONOMY

An alternative model to the linear economy. It combines economic and ecological goals. In this system, materials never become waste, but are kept in circulation through maintenance, reuse, refurbishing, restoration, recycling, or composting. The circular economy combats climate change and other global challenges such as biodiversity loss, waste, and environmental pollution by decoupling economic activity from the consumption of finite resources: materials in the cycle contribute to value creation on a permanent basis.



© Photos: Archive of the Max Planck Society.
Cover picture: digitale frische, Cologne.

DahlemTour Berlin

Guided tours for groups and school classes.

Max Planck Society
Berlin Office - Communication Department

Enquiries:
Dahlemtour@gv.mpg.de



Information:
www.mpg.de/dahlemtour-en

General guided and themed tours

Immerse yourself in the fascinating world of 20th-century science and embark on a journey through time at the “German Oxford,” now the Dahlem Campus in Berlin.

Audioguide

Explore the Dahlem Campus at your own pace with the DahlemTour app.