



Wellbeing within Planetary Boundaries **A call and proposals for the Circular Economy**

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Executive Summary

This Policy Brief summarises Oeko-Institut's recommendations for policymakers. Developed on the basis of our scientific findings, these recommendations are intended to provide guidance for political representatives in their decision-making for a circular economy.

Key approaches for unlocking the potential of a circular economy:



Less raw material consumption

An ambitious and integrated circular economy contributes to *global climate change mitigation, resource conservation and the protection of biodiversity*. Consideration of all R-strategies¹ is important in this context, as is a focus beyond waste management. Reducing absolute raw-material consumption is key to a circular economy.



More commitment

An ambitious and integrated circular economy cannot be achieved solely by market forces and awareness-raising measures. For the economy to operate in a resource-efficient manner within planetary boundaries, *regulatory frameworks and fiscal and economic incentives with a strong steering effect* are required. This must include intensified use of environmental and resource taxes, the phase out of environmentally harmful subsidies, investment in circular products, technologies and infrastructures, ambitious circular minimum standards for products, and measures to promote sufficiency. The framework for the policy instruments is provided by a resource conservation law with a binding reduction target for raw material consumption.



Focus on quality

We should increasingly prioritise quality instead of quantity; this means *product and service quality* and, equally, *quality of life*. The latter involves much more than having as many material possessions as possible. Minimum standards, e.g. as part of ecodesign regulations, can safeguard a high level of product quality. And alongside gross domestic product, quality should be one of the measures of economic success, which means taking social and economic impacts into account.



A shared positive vision for the future

The transition to a circular economy involves structural change in many sectors of the economy. This will particularly affect linear economic operations that are responsible for major environmental impacts. Only with substantial changes in these economic sectors it will be possible to unlock the potential of the circular economy to protect our planet. For society at large, however, structural change causes uncertainty. Concerns about job losses and a decline in prosperity lead to a lack of acceptance of the changes that are necessary from an environmental perspective. Forward-looking social and labour market reforms and long-term investment in circular economic sectors play a key role in mitigating the public's concerns about the future. A continuous and open social dialogue is also important, as is a positive vision for the transformation.

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¹ The 10 R-strategies are: (1) Refuse, (2) Rethink, (3) Reduce, (4) Reuse, (5) Repair, (6) Refurbish, (7) Remanufacture, (8) Repurpose, (9) Recycle and (10) Recover.

Background

Oeko-Institut's current donation-funded project focuses on the circular economy and is one amongst a series of studies on this issue. Together with WWF Germany, Fraunhofer ISI and FU Berlin, we recently published the comprehensive [Model Germany Circular Economy](#) report, which includes a modelling study and detailed policy recommendations with general and specific policy instruments for eight sectors.

Against this background, in this policy brief, we wish to point out that only a fundamental transformation of our economic model and consumption can positively influence the environment, resource security and human wellbeing—outcomes which many people are hoping a circular economy will deliver. The policy instruments that are discussed in many publications will only work in combination with this transformation. From our perspective, achieving circular economy objectives therefore requires the following:

- Less raw material consumption.
- More commitment.
- More quality.
- A shared positive vision for the future.

Themes such as decarbonisation of industry, use of biogenic raw materials as substitutes for fossil resources, technologies for closed carbon cycles (such as carbon capture and storage/use) and digitalisation for more efficient closed loops are currently key aspects of the debate about the circular economy. They are part of a strongly technology-focused perspective and are an important element of the transformation. However, we believe that this discourse fails to address the more fundamental precondition for a circular economy: a substantial reduction in our resource use and in our consumption.

Where are we heading?

Six out of nine planetary boundaries—global warming, biosphere, deforestation, pollutants/plastic, nitrogen cycles, and freshwater—have already been exceeded. The reason for this rests to a large extent on our economic model, above all our excessively high resource use associated with overproduction and consumption. [Global resource use](#) was three times higher in 2017 compared to 1970, at around 100 billion tonnes, and its distribution is far from equitable: Germany's resource consumption reached 16 tonnes per capita per year in 2019, 30 % higher than the global average. If we continue as before, global material use will reach 190 billion tonnes in 2060.

The challenge of excessively high resource consumption has been addressed in various policy statements, e.g. in the European Green Deal, the EU's Circular Economy Action Plan, and as part of the development of the National Circular Economy Strategy in Germany. However, the existing national resource conservation strategies do not provide a framework for addressing key barriers to effective restructuring of our economy. Current resource policy strategies, which rely on voluntary commitments and support programmes, are not an adequate response to the distortions in our current economic system, which is based on the squandering of resources. It is obvious that we must pursue a different approach.

For us, one aspect is central: a circular economy has the potential to enhance global wellbeing while simultaneously contributing to overarching environmental goals such as climate change mitigation, resource conservation and the protection of biodiversity. **We are convinced that an absolute, global, permanent, rapid and comprehensive reduction in the consumption of materials and energy is required. Only then will our economy be sustainable over the long term and operate within planetary boundaries.** With that goal in mind, the policy framework must support the following action strategies:

- slow resource flows, e.g. with product durability and intensified product use,
- reduce resource flows, e.g. by ending overproduction and reducing the use of fossil fuels,
- close resource loops, e.g. with high-quality material recycling,
- substitute materials, e.g. by removing pollutants and materials that interfere in recycling.

Why the circular economy has failed so far

A move away from a linear economy and a transition to a circular economy will not happen of their own accord. The fact is that, under the present regulatory and economic conditions, **raw-materials-intensive business models are often more profitable, purely from a commercial perspective, than circular approaches.** There are many reasons for this, such as the following:

- Many raw materials are extracted and processed in regions **with weak or poorly implemented environmental standards**, which often leads to avoidable environmental damage (keyword: externalisation of costs). In addition, due to the existence of enormous environmentally harmful subsidies—for example in the oil industry—**primary raw materials are available at comparatively low cost on the world market.** The financial savings achieved by reducing consumption of primary raw materials are therefore comparatively insignificant compared to any additional costs in the areas of logistics and human resources e.g. Sharing-Economy-Models, reuse, products made from recyclates.
- For many market players, the satisfaction of needs is traditionally based to a significant extent on the **production and sale of large unit volumes.** Accordingly, infrastructure, product development, marketing/advertising and research are geared to the optimisation of

existing production and sales systems and, very substantially, to overproduction. By contrast, the **investment budgets available for circular business models are comparatively small** and necessary infrastructure is still underdeveloped.

- The weak diffusion of circular business models also means that **appropriate solutions are often not harmonised and standardised.** For example, multi-use solutions for parcel deliveries and cosmetic products have been developed but are unable to compete successfully with single-use solutions due to a lack of standardisation and compatibility. Conversely, numerous **product and production standards are designed for primary raw materials** and hinder the use of recyclates.
- In many areas, it is currently **easier (and often more cost-effective)** for consumers to **make use of established “linear offers”.** Existing production and consumption patterns thus become further entrenched and are viewed, in some cases, as immutable.
- There is a lack of **targeted political governance of raw materials in those sectors which contribute to the welfare of broad sections of the population**, such as the expansion and maintenance of public transport and renewable energy infrastructures.

Contrasting with these barriers, however, there are also some **positive examples** which show that entrenched economic models can be transformed, thereby creating opportunities for the economy and for society as a whole:

- Due to the establishment of an effective regulatory framework, the **waste management and recycling sector** has developed into an innovative branch of the economy which provides a large number of jobs while contributing to significant reductions in environmental impacts and to resource conservation.
- In the **second-hand and swap shop** sector, new opportunities and business models based around product lifetime extension and reuse have arisen over the past decade, partly due to information and communications technology (ICT). The number of **suppliers of refurbished devices** (Note: some sources linked in this report are only available in German.), particularly in the ICT sector, is thus increasing, while **more consumers** can now envisage making use of these offers.

- The European Commission’s Circular Economy Action Plan (CEAP) is moving into the implementation phase. With the new **Batteries Regulation**, comprehensive product specifications relating to recycled content, labelling and durability, second-life options and replaceability were recently established for this key product group.

These positive approaches do not yet amount to a major change, but they are a start. It is essential to **systematically expand and scale these and similar approaches, focussing on the establishment or targeted reform of regulatory and economic frameworks.**

What action is needed now?



Less raw material consumption

- Reduction of absolute raw-material consumption
- Sufficiency-oriented policies
- Raise the level of ambition in policy instruments, fully exploit the existing legal scope Möglichkeiten ausschöpfen

A transition to a circular economy requires many small steps. To ensure that these steps do not become mired in detail, they must be clearly oriented towards one principal goal, namely a **reduction of absolute raw material consumption**. An ambitious target is required here. With globally equitable resource consumption, Germany would ideally cut its resource use from its present level to between **5 and 7 tonnes per capita per year** by 2045.

There is thus a need to prioritise **sectors and areas of consumption with particularly high savings potential**. According to current [information](#), these are

Below, we describe ambitious legislation and sufficiency-oriented policies with reference to three other sectors:



Electrical and electronic equipment (EEE)

Major savings potentials can be unlocked with improved product design and logistics strategies that support durability and reparability. In relation to ICT applications in particular, this also includes the software used. Longer guarantee periods, minimum durability requirements under the European Ecodesign for Sustainable Products Regulation (ESPR) and an ambitious 'Right to repair' are key measures. As regards the collection of waste electrical and electronic equipment (WEEE), Germany must finally reach the EU's binding minimum target of 65 % of EEE previously placed on the market (**2021: just 38.6 %**). Intensified [use of distribution logistics](#) (e.g. delivery services) should be considered for this purpose, and the responsibility for reaching the collection target should be devolved to manufacturers. Policies against the destruction of unsold goods and returns and against export of poor-quality (used) goods must be consistently enforced.

construction and housing; mobility; food; electrical and electronic equipment (EEE); textiles; and packaging. Environmental benefits, resource conservation and greenhouse gas emissions reductions can be achieved in all these sectors, particularly with sufficiency measures.

For the *construction and housing* and *mobility* sectors, the principles that underly the policy instruments are often the same as those applied to climate change mitigation, namely: decarbonisation; expansion of public transport; a reversal of the trend towards ever-larger vehicles and per capita living space; smarter building, housing and mobility strategies which also promote social cohesion; and the maintenance and longest possible usage of the stock. The food sector also offers great potential for climate change mitigation, protection of biodiversity and resource conservation. However, in social policy terms, this is a sensitive area, for it relates to individual eating habits and trends as well as consumers' financial scope. Policy instruments for the food sector—and, indeed, for biomass more generally—are therefore considered separately in the German government's [Food and Nutrition](#), [Arable Farming](#) and [National Bioeconomy](#) strategies.



Textiles

All the actors in this sector, comprising fashion, clothing and other textile products, must remind themselves of the need for moderation, with less consumption, higher quality and a shift away from increasingly short fashion cycles. More durability and reusability are the goals here. In particular, the timely development and implementation of effective minimum requirements relating to durability, reparability and recyclability of textiles in the European ESPR framework should be promoted. This needs to be accompanied by regulatory measures against the destruction of unsold goods and returns and the export of poor-quality (used) goods and textile waste. It is strongly recommended that textile waste collection and recycling be integrated into a mandatory system of Extended Producer Responsibility (EPR), backed by ambitious collection and recycling targets. In addition to recycling targets, mandatory reuse targets should be introduced, with increases phased in over time. Here too, manufacturers should be held accountable for meeting the targets.



Packaging

The continuous growth in packaging consumption must end, which can be achieved with steady increases in the cost of packaging materials. To achieve this, we propose a tax on first-time use of packaging materials. The tax rate should be set at a sufficiently high level to achieve a steering effect. The tax rates applicable to the individual materials should be based on their respective environmental impacts, bearing in mind that recyclates have a lower impact than primary materials. As only first-time use would be taxed, a lower tax rate would apply to multi-use packaging and would be reduced proportionately as circulation figures increase and the single-use fraction decreases. An unpackaged and multi-use packaging provision for all segments, in which well-functioning and sustainable offers are already available on the market, will additionally support the switch to a system of goods distribution that makes use of low amounts of materials. Revenue from the packaging tax should be spent on supporting innovative, eco-friendly unpackaged or multi-use systems and, if necessary, should at least partially offset relevant additional costs for low-income groups. An additional surcharge on packaging that is not suitable for high-quality recycling² should also ensure that within the foreseeable future, almost all forms of packaging can be recycled and recycling losses reduced.

A number of measures applied across sectors and areas of consumption can help to reduce resource use. They include:

- tapping anthropogenic stocks of secondary raw materials (e.g. landfill sites, demolition waste, municipal waste),
- intensifying the use of recyclates,
- improving the quality of recyclates,
- increasing acceptance of products with recycled content,
- establishing good communication along the supply chain,
- introducing legislation on chemicals, which reduces the pollutant content in primary products while allowing exemptions for recyclates,
- prohibiting the destruction of unsold goods,
- and more.



More commitment

- A resource conservation law with a binding reduction target for raw-material consumption
- Environmental taxes and adjustment of subsidies
- Financing of circular products, technologies and infrastructure
- Manufacturers' and distributors' consistent contribution towards costs and liabilities
- Green and circular public procurement: leveraging the state's role-model function and market power

The (national) rules on resource conservation are, for the most part, product-specific, fragmented and oriented towards linear consumption patterns. They must be supplemented by an overall goal, since it is clear that the existing provisions of the law are not sufficient to achieve the necessary reduction of absolute raw-material consumption in Germany. This framework-setting must provide stakeholders with certainty on the direction of the politics, which is essential to promote investment:

- The German government must set binding, cross-departmental targets for reducing resource use, starting with the most relevant fields of action. The targets need to be realistic and verifiable; appropriate indicators are therefore required. Furthermore, a clear timescale must be established, with binding interim targets,

² Packaging that is recyclable to a high degree is defined nowadays as packaging with at least 90% recyclability. Following a transition period of two or three years after the introduction of the surcharge, this threshold should be raised to 95%.

an accompanying system of monitoring, and mandatory adjustment options in the event of non-fulfilment of interim targets. These provisions should be adopted in the next legislative term, at the latest, by means of a **resource conservation law**.

- In order to foster a circular economy, a transformation of **economic frameworks** is required. In the interests of promoting and scaling circular business models such as repairing, sharing, rental services and used goods stores, these models need to be at least as economically attractive as non-circular equivalents. For example, the use of secondary raw materials should not be disadvantaged compared to primary resource use. An important area where leverage must be applied lies in financial legislation, which should be amended to remove any doubt about the constitutionality of environmental taxes, e.g. on the use of scarce resources,

and bonus/penalty systems. Subsidies for non-circular economic models must be progressively reduced. The (value-added) tax rates need to be adjusted in favour of circular business models and products.

- **Taxation of resource use or emissions** should ease the burden on other revenue sources, such as income tax; it should also have a steering effect in favour of environmentally sound technologies and behaviour.
- In addition, there is a need for substantial investment in circular activities. Various **financial mechanisms** and arrangements may be considered, e.g. lending on favourable terms; "CE bonds" as a variant of transition bonds; mobilisation of private capital through targeted deployment of public funds; and alignment of existing financial market rules, such as investment and insurance regulations, to support investment in circular sectors.

- Under **Extended Producer Responsibility (EPR)** schemes, manufacturers and distributors must contribute far more consistently towards the expenses, costs and liabilities associated with their products' environmental impacts. For this, it is essential to ease the financial and organisational burden on other stakeholders, such as the state, local authorities and consumers. EPR schemes should be mandatory (via legislation), with penalties for non-compliance. Responsibilities and targets must be ambitious yet achievable, measurable and clearly assigned to a stakeholder group. The targets should be periodically adjusted, and the level of ambition progressively increased. More consideration should be given to the higher levels of the waste hierarchy and the priority R-strategies.

- **Public procurement** in Germany is worth around EUR 500 billion per year and accounts for a substantial share of purchases of goods and services. There is scope for better and more effective leverage of this market power to support the transition to a circular economy, provided that circularity is firmly embedded in the law. This can be achieved by including legally binding award criteria on the circular economy in the German Competition Act (GWB) and contract award regulations, e.g. by no longer awarding tenders based on the lowest cost, but instead based upon environmental performance; and by expanding the General Administrative Regulation on the Procurement of Climate-Friendly Services ('AVV Klima') into a general administrative regulation on the procurement of environmentally friendly services. This would ensure that procured services are evaluated not solely based

on greenhouse gas emissions, but also according to requirements set out in the Circular Economy Act (*Kreislaufwirtschaftsgesetz*). The requirement would be integrated into general procurement rules to give preference to used / recycled products.

These commitments should not only apply to decision-making and action in Germany. As resource flows and supply chains are global, and national economies are interconnected in a globalised world, Germany must fulfil its responsibility in the EU and international contexts as well. This needs to include strict enforcement of existing rules, e.g. on waste exports. Development funding should be aligned much more closely with environmental, climate and, above all, resource conservation provisions, and its deployment should support measures aimed at prevention and reuse.



More quality

- **Ambitious minimum standards in the further development of the Ecodesign for Sustainable Products Regulation (ESPR) for sustainable, high-quality products**
- **Quality of life involves more than material possessions**
- **Redefining economic success**

The aim is to achieve higher quality in various spheres of life while simultaneously reducing resource consumption. Our aspirations for a circular economy are therefore as follows:

- **Resource-efficient behaviour must be convenient and economically advantageous:** Behavioural changes cannot be achieved simply by appealing to consumers to buy less. A more effective approach is to make access to circular alternatives as easy, convenient and profitable as possible—for an improved quality of life. This is illustrated by the following examples:
 - The collection of waste electrical and electronic equipment can be converted from the current bring system (where the obligation is on the consumer to take the equipment to a collection point) to a [pick-up system](#). If this pick-up system is organised via the existing parcel delivery services, the additional logistical effort is minimal.
 - [Multi-use systems](#) in the packaging sector need to be expanded and designed so as to ensure that packaging can be handed back at multiple locations, regardless of where the goods were purchased. In addition, a mandatory multi-use quota in retail (e.g. in segments such as beverages, wine, dairy products and preserved goods) can unlock economies of scale.
- **We want good-quality products:** It is an almost universal experience: a seemingly attractive offer soon turns out to be a “bad buy” and so another product has to be purchased instead. This illustrates one of the fundamental links between resource conservation and consumer interests. Introducing minimum product quality and durability standards can therefore be very effective. Our definition of good-quality products also includes those which contain a high proportion of secondary raw materials. To ensure that these products make a significant contribution to closing loops and reducing primary material consumption, minimum quality standards for secondary raw materials are required. These standards benefit quality manufacturers, including those with strong regional ties or sustainable and transparent international supply chains.
- **Other things matter:** Circular strategies are not only about recycling and better product design. The concept of *quality* can also include aspects such as leisure and employment and how we organise them. Here, broad sections of the population are learning from experience that there is no linear correlation between quality (of life) and the size of one’s property or the frequency of air travel. On the contrary, concepts such as working from home (WFH) (reduced commuting time and costs), local leisure activities and minimalist home design are in growing demand. It is the time spent with family and friends that we define as “quality time”. These trends must be harnessed and promoted.
- **Human wellbeing instead of GDP:** In Germany’s Annual Economic Report for 2023, it was announced that other factors besides material and economic aspects must be considered in measuring the *quality of economic development*. They include social inclusion and equitable participation in economic life, a resilient and democratic society, unspoiled ecosystems and greenhouse gas neutrality, a dynamic research and development landscape, strong innovation capacities to safeguard competitiveness, and sustainable public finances. This must now be put into practice, not merely by monitoring progress but by actively taking measures to curb divergent trends.



A shared positive vision for the future

- Managing conflicts of interest
- Coalitions for a new economic policy
- Supportive social, educational and labour-market policies
- Focus on benefits and opportunities

In addition to comprehensive restructuring of regulatory and economic frameworks, the direct benefits of transforming our economic model and reducing resource consumption need to be clearly identified and communicated in order to unlock opportunities. However, it must be anticipated that representatives of linear business models will respond hesitantly to these changes or even reject them altogether. Accordingly, the pathway to a circular economy will require not only careful sectoral analyses that identify savings potentials and possible action strategies (see above), but will also demand **political will, assertiveness, a proactive, participatory and cross-sectoral approach and a balanced dialogue** with stakeholders on emerging conflicts of interest.

The circular economy offers **many direct benefits and opportunities** for consumers, innovative suppliers and decentralised industries. They include higher product quality and longer lifetimes, the development of new fields of business in servicing, repairing and maintenance, and the provision of new utilisation concepts. Longer-term benefits will include savings generated from more durable products and their shared use, or simply more free time. For example, it may be assumed that a four-day workweek can contribute to a more sufficient lifestyle, with less time spent commuting, increased productivity, a smaller, less consumption-based environmental footprint, and more time for cooking, carrying out repairs or making journeys on foot. A four-day workweek therefore has great potential to enhance wellbeing while reducing raw material consumption. Other benefits that may result from a more sufficient lifestyle include an unspoiled natural environment as a space for leisure and recreation, clean air, healthier food, and more justice, including on a global scale.

Measures should be designed in a way which ensures that they are **accepted by society**, create new socio-economic opportunities, and avoid or offset additional burdens, especially for low-income groups. Interventions and mechanisms which are predicted to have negative distributional effects will only be successful if they are accompanied by social policy measures. Role models, participatory processes such as citizens' dialogues, and representative surveys such as the Environmental Awareness Study conducted by the German Environment Agency (UBA) can help to increase **acceptance**.

Multiple stakeholders have already embarked on the transformation pathway, and many new projects are emerging, ranging from civil society coalitions such as the Wellbeing Economy Alliance to corporate initiatives such as those discussed at the Sustainable Economy Summit in winter 2023. In summer 2023, the European Parliament also hosted a conference on the topic "Beyond Growth". **Firms** can venture along this path as well, by establishing and deploying alternative business models or resource-efficient innovations, converting their corporate structures (e.g. into companies with tied assets or not-for-profit entities) or by—voluntarily—assuming responsibility for their products, up to and including disposal within Extended Producer Responsibility schemes. They can advocate for the wellbeing of their employees, invest company assets more sustainably, and withdraw environmentally harmful products from the market. Ideally, under the new frameworks in place, they will reap economic rewards for these measures.

This positive vision for the future can be held up in response to those who claim that more sustainable and resource-efficient circular consumption is associated with prohibitions, deprivation, and the curtailment of individual freedom, or is too challenging or expensive. "Business as usual" is not an option, for our transgression of planetary boundaries will definitely have major impacts on everyone's lives. A positive vision for the future can help to break the political stalemate. It must be made abundantly clear in the dialogue that a circular economy offers many more benefits from a whole-society perspective, that it is manifestly superior to pursuing a linear economy with all its drawbacks.

We must find the courage to embrace a new mindset and a different approach to our way of life.



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