

WHITE PAPER FOR AN
EU WITHIN PLANETARY
BOUNDARIES

Sustainable Resource Management in the EU



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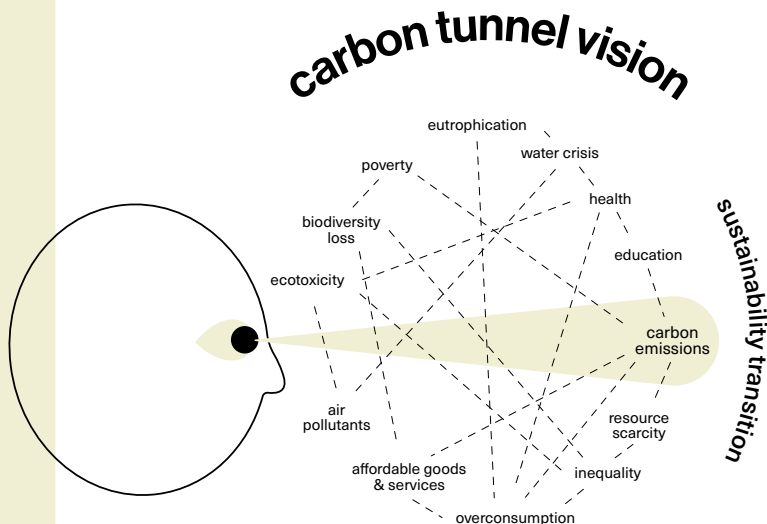
Introduction: Why we need EU action on Sustainable Resource Management

Resource extraction and processing are at the root of the greatest crises of our generation: global warming, biodiversity loss, water stress, pollution, and social injustices. The evidence is clear: 90% of global biodiversity loss and water stress, 50% of global greenhouse gas emissions, and over 30% of air pollution health impacts are caused by resource extraction and processing. The EU is one of the largest consumers of resources in the world, using between 70% and 97% of the 'safe operating space' available for the whole world, despite only making up 6% of its population.¹ To meet its environmental goals and to achieve the EU's objectives of "living well within planetary boundaries", it is absolutely necessary that the EU addresses its unsustainable consumption of resources.

Under current patterns of production and consumption, the extraction and use of primary materials are expected to increase globally, from 89 gigatonnes (2017 data) to a staggering 167 gigatonnes in 2060. The EU's material footprint - the total amount of fossil fuels, biomass, metals and minerals it consumes, including embodied in imports - currently stands at an alarming 14.8 tonnes per capita annually, more than double the threshold deemed sustainable and just.² This trend is set to keep rising unless decisive action is taken.

Security of supply is central in the EU debates on the energy crisis and raw materials. Reducing the EU's dependence on resource and energy imports makes it easier to preserve its independence and strengthen its resilience to potential future conflicts. As a consequence, reducing material demand can foster the development of the EU's strategic autonomy and decrease its dependence on external sources of materials.

A 2023 legal opinion commissioned by BUND analysed the current European and German legal landscape regarding resource consumption and concluded that there is a gap in current legislation as ordinary law does not set a binding objective of resource protection and sustainable resource use provisions. According to the study, in order to close this legal gap, a new law with overarching binding targets is needed.



The EU Climate Law and the European Green Deal have been major steps towards making the EU more sustainable. However, many key parts are subject to 'carbon tunnel vision' and do not adequately address the systemic links between the climate crisis and other worsening global crises such as biodiversity loss, pollution, resource depletion, human rights violations, rising inequality and stagnating levels of wellbeing. As a result, our ecological challenges persist and are notably exacerbated by the EU's unsustainable utilisation of natural resources and materials - a fundamental driver of environmental crises.

1. The source data of this 2019 publication date from 2010 and include the United Kingdom as part of the EU. The UK has a similar footprint as Germany.
2. Based on best available research described within supplementary information 2.6 of: O'Neill, D.W., Fanning, A.L., Lamb, W.F. et al. A good life for all within planetary boundaries. *Nat Sustain* 1, 88–95 (2018). <https://doi.org/10.1038/s41893-018-0021-4>

The Pillars of an EU Legislation on Sustainable Resource Management

An EU legislation on Sustainable Resource Management will help transform Europe into a fair, autonomous, resilient and sustainable economy. It is made up of:

1. A Directive

The Directive will set a legal objective for the Union to reach sustainable levels of resource consumption in relation to its biocapacity. It will include a clear delineation of the EU's and each Member State's role in reducing material footprints (fossil fuels, biomass, metals, minerals). A Directive would give greater flexibility for Member States to transpose the laws at the national level in a way that works best for their political, social, economic and cultural contexts, also taking into account their specific biocapacity, current progress and historical contributions. Integral to the development of this Directive will be citizens' and workers' involvement, i.e., EU level citizens assemblies, citizens assemblies for national transposition, workers' representation and involvement of grassroots movements.

2. Targets & caps

Targets and caps drive clear and measurable action. Targets should include a binding reduction in EU material footprint (raw material consumption, as measured by Eurostat) to 5 tonnes per capita by 2050 (a 66% reduction compared to 2022 levels of 14.8 tonnes per capita), with mid-term reduction targets of at least 20% by 2030 (11.8 tonnes per capita per year) and at least 50% by 2040 (7.4 tonnes per capita per year).³ National targets for each Member State to reach should subsequently be developed, indicated in tonnes per capita rather than a percentage reduction, and taking into account specific Member State contexts, biocapacity, historical responsibility and more. Targets could be supported by binding caps on domestic raw material extraction and on resources'/ products' imports to the EU.

3. Strategies & policies

A commitment by the Union and its Member States to develop sufficiency strategies and legal requirements to support the achievement of the targets with a focus on reducing resource use in high-consumption sectors such as transport, construction and digital sectors and developing sector-specific roadmaps with binding sub-targets. For example, national and urban net-zero strategies should be in congruence with resource use reduction targets and circularity (reuse, remanufacture and recycling) targets to ensure a holistic and coherent approach to addressing environmental challenges with the resource justice objective and to prevent burden shifting through a narrow focus only on material substitution (e.g. bio-based materials/products replacing fossil-based materials/products yet consumption remains the same so impacts from fossil mining shift to impacts on land use). Strategies should also ensure a just transition in line with the International Labour Organization guidelines to less environmentally and socially harmful industrial production for essential industries, with greater state spending on research, development and support for these sectors. There should be a strong global element embedded in all strategies and policies.

3. The necessary targets are calculated on the basis of the 50 Gt/yr target for materials use on a global scale. This target is shared by the following research: Bringezu, 2015, 2019; Dittrich et al., 2012; O'Neill et al., 2018. It can be translated to 5t/cap/yr in 2050, estimating a population of 10 billion people (UN's "medium variant" prediction is 9.7 billion people by 2050). The target is split by assuming that reductions are easier to attain in the beginning (low hanging fruit) and harder to attain over time as the material footprint decreases. It corresponds to a reduction of 0.59t/cap/yr per year between 2025 and 2030; of 0.44t/cap/yr per year between 2030 and 2040; and of 0.24t/cap/yr per year between 2040 and 2050. It is assumed the reduction starts in 2025 at the 2022 footprint of 14.8 t/cap/yr.

4. Social equity & a just transition

Social justice should be at the core of the legislation. This means ensuring material resources in Europe (within the overall limits set above) are (re)distributed fairly, massively reducing the gap between the largest consumers (nations, industries, people) and the smallest. The aim should be to meet the basic needs of all in society (in the EU in 2022 22% of the population were at risk of poverty or social exclusion) within the limits of the planet. This means that the new directive has to be accompanied by measures taken by Member States that address inequality and luxury consumption, such as redistributive taxes and social programmes. Furthermore, addressing resource-intensive sectors requires a just transition, which acknowledges the inevitable shifts in industries and strives to make them fair, ensuring that no worker is left behind. The legislation on sustainable resource management must work hand-in-hand with relevant legal frameworks and social policies and guarantee that workers' rights are upheld throughout the process. This includes ensuring fair wages, social protection, safe working conditions, retraining initiatives, and protection against discriminatory practices. The enforcement of current, and expansion of social dialogue legal rights, is required to ensure that at all stages of the transition process vulnerable workers are consulted.

5. Monitoring

An EU Scientific Advisory Board on Sustainable Resource Management, working in cooperation with the European Scientific Advisory Board on Climate Change, should be established that will provide independent scientific advice. There should also be close engagement on the global level with the UN International Resources Panel towards a Global Resource Treaty. Impacts on workers and communities should also be monitored and state aid given where required to address challenges.

The 7 Benefits of an EU legislation on Sustainable Resource Management

1. Tackling the ecological crises

The EU cannot come back within planetary boundaries and achieve its decarbonisation and biodiversity objectives without taking a sufficiency approach and reducing resource consumption. Cutting material use can help the EU decarbonise in two ways: by reducing hard-to-abate process emissions in the production and transportation of raw materials like steel, cement, aluminium, and plastic, and by reducing overall energy demand in the economy, thereby facilitating a faster transition towards renewable energy. Resource extraction also destroys habitats and increases waste generation. For example, deforestation for agricultural expansion results in habitat loss and species extinction. Limiting damage to the climate as well as land and sea ecosystems will be impossible unless resources are used at sustainable levels.

2. Transitioning to a true circular economy

Legislative efforts at the EU level to propel the shift towards a circular economy such as the EU's new Ecodesign of Sustainable Products Regulation (ESPR) have been intensifying in the past decade, yet the EU's circularity level remains at an under-performing 11.5%. The journey towards circularity has been hindered by an overemphasis on minimising material losses through recycling. While recycling is essential it falls short in confronting the overuse of and further increase of resources and materials use. The gains in efficiency are frequently nullified by the rebound effect, where saved resources are redirected to increased consumption. Furthermore, existing recycling processes often demand substantial energy and virgin raw material input while falling short of addressing the input of substances of concern during production and the risks posed to human health by legacy substances. A fundamental shift toward strategies to reduce production and consumption such as sufficiency, reuse and repair, and move us to a toxic-free environment are paramount for a truly effective transition to a circular economy.

3. Achieving strategic autonomy

Security of supply is central in the EU debates on the energy crisis and raw materials. Reducing the EU's dependence on resource and energy imports makes it easier to preserve its independence and strengthen its resilience to potential future conflicts. Considerable vulnerabilities arise from the EU's heavy dependence on non-EU imports from a limited number of countries governed by authoritarian regimes rife with corruption or undergoing significant instability. For example, 98% of the EU's rare earth elements supply comes from China. Reducing material demand can foster the development of the EU's strategic autonomy and decrease its dependence on external sources of materials.

4. Fostering global peace and security

The exploitation of high-value natural resources, including oil, gas, minerals and timber are a key factor in triggering, escalating or sustaining violent conflicts worldwide when they overlap with other factors, such as ethnic polarisation, high levels of inequity, poverty, injustice and poor governance. Furthermore, increasing competition over diminishing renewable resources, such as land and water, are on the rise. Implementing measures to reduce resource consumption can mitigate these risk factors that may lead to conflicts and contribute to fostering global peace and security.

5. Delivering resource justice and mitigating EU's impact on the Global South

The people and nations who consume the least pay the highest price, including women, indigenous peoples and other marginalised groups. For example, nearly 90% of air pollution-related deaths occur in low- and middle-income countries, many due to industrial activities feeding Western overconsumption. Indigenous Peoples represent less than 5% of the global population, they protect nearly 80% of global biodiversity. The 1.2 billion poorest people, mostly living in Global South countries, account for just 1% of the world's consumption, while the one billion richest, mostly living in Western economies including the EU, account for 72%. Reducing resource consumption in Europe will also provide the necessary biophysical space for low-income countries to exercise their right to development and meet the needs of people in the Global South through a more fair global distribution of natural resources.

6. Respecting human rights and workers' rights

Reducing resource consumption will support EU efforts to ensure respect for human rights and workers rights in EU value chains. The extraction of raw materials is often linked to human rights abuses, with numerous cases of poor or illegal labour conditions, violence against local communities, and forced displacement of indigenous and local communities. For example, in 2020 mining was reported as the deadliest industry for those who oppose it, with more environmental defenders killed for opposing mining than opposing any other industry. EU overproduction and overconsumption are also linked with abuse of workers' rights and poor treatment of workers in the race to increasingly grow production levels for profit. For example, an investigation into Amazon's French warehouses cites massive use of temporary work contracts, high rates of absenteeism and a high level of staff turnover and of dismissals for incapacity. Less resource overproduction and overconsumption means less extraction and the potential to slow down value chains, retrain workers in socially useful and environmentally safe work, reduce working hours, and give greater space to ensure respect for human rights and workers' rights while creating a more circular wellbeing economy.

7. Stimulating change towards social equity, health and wellbeing

Reducing resource consumption is essential for transitioning to a new economic model that prioritises the wellbeing and rights of both people and the planet. With social justice programmes foundational to this legislation, the results will be greater equity in consumption levels - a focus on raising the social floor for those in need and greatly reducing the consumption of those (industries, nations, people) in excess. Research has consistently demonstrated that the correlation between material wealth and happiness is weak, particularly in affluent societies. Excess material consumption can have negative impacts on individuals and communities, including increased debt, marine, air and terrestrial pollution, environmental degradation, and social inequality. Therefore, prioritising societal needs and non-material values can actually improve various aspects of subjective wellbeing and mental health, including a greater sense of community, life satisfaction, and life purpose.

The time has come for an EU legislation on Sustainable Resource Management

1. The political momentum is there

The European Parliament has called for the “urgent need for an overall reduction in resource extraction and use” in its 2015 [own-initiative report](#) on resource efficiency and called for “science-based binding 2030 EU reduction targets for material footprint and consumption footprint” in its 2021 [opinion report](#) on the EU Circular Economy Action Plan.

EU Member States are becoming frontrunners in target setting, while more needs to be done to make them binding and backed up by detailed plans:

- [Austria committed](#) to reduce material footprint per capita by 80% by 2050
- [The Netherlands has](#) as its “guiding ambition” for a circular Dutch economy to be using 50% less primary abiotic resources (minerals, metals and fossil carbon resources) by 2030
- [Finland established](#) a target to stabilise total consumption of domestic primary raw materials, so that in 2035, it will not exceed the 2015 level
- [Flanders \(Belgium\) committed](#) to reducing the material footprint by 30% in 2030 and 75% in 2050 and have developed a [paper calling for a EU material resources law](#)

In addition, Belgium, Denmark, Estonia, Finland, France, Lithuania, Poland, Slovakia and Spain produced a [Joint Non-Paper](#) in 2021 asking the European Commission to launch “a process towards material and consumption footprint reduction targets in Europe” and that this should be “completed by principles that prevent overproduction (including overpackaging) and overconsumption”.

The European Commission has, in its [8th Environment Environment Action Programme](#) which entered into force in May 2022, stated that one of the conditions in order to achieve its objectives is that the EU’s material and consumption footprints are significantly decreased to bring them into planetary boundaries as soon as possible, including through the introduction of Union 2030 reduction targets. No movement on this goal has happened yet.

It has also introduced several more specific resource and consumption reduction targets in various legislations and packages:

- The [Ecodesign for Sustainable Products Regulation](#) proposal includes measures on material efficiency and material footprint to prolong the lifespan of devices and indirectly decrease consumption.
- The [Energy Efficiency Directive](#) includes that Member States shall collectively ensure a reduction of total energy consumption of at least 11.7% in 2030 compared to the projections of the 2020 EU Reference Scenario.
- The [REPowerEU Package](#) and the [Winter Preparedness Package](#) included targets to decrease EU gas consumption by 15% between August 2022 and March 2023, as well as reduce electricity demand by at least 10% until 31 March 2023.
- One such measure is the support for smartphone reparability.
- The [Single-Use Plastics Directive](#) introduced an EU-wide consumption reduction goal for single-use food and drink packaging.
- The [proposal for a revision of EU legislation on Packaging and Packaging Waste](#) introduced reduction targets for packaging waste.
- The [proposal for a targeted revision of the Waste Framework Directive](#) introduced food waste reduction targets.

Yet these measures focus on specific products, sectors, or types of consumption, and most of the targets are not in line with the ambition needed for consumption to be at a sustainable and just level. There is a need to adopt a more comprehensive and coordinated approach to resource management to address the transboundary nature of material consumption and ensure that sustainable limits are not exceeded.

2. The willingness of citizens is there

Recent surveys and data have indicated that a significant number of European citizens support the idea of a post-materialist future. They believe that a shift towards a more sustainable, equitable, and low-carbon economy would not only benefit the environment but also improve their quality of life.⁴ One such research study of more than 10,000 people in 29 high-income and middle-income countries found that 70% believe that “overconsumption is putting our planet and society at risk” and 65% believe that “our society would be better off if people shared more and owned less.” Many European citizens have developed concrete initiatives that are already putting such a future in practice, such as repair cafés and eco communities. It is time for the EU to follow suit and set the right policy context for such initiatives to flourish and contribute to an EU within planetary boundaries.

4. Public acceptance of post-growth: Factors and implications for post-growth strategy - ScienceDirec*