Setting a material footprint target in the EU Circular Economy Act

The case for a binding EU target on sustainable material consumption

The European Union consumes natural resources well above the world average and at a rate roughly twice the level considered globally sustainable. In 2024, the EU's material footprint stood at 13.7 tons of raw material consumption (RMC) per capita, equivalent to around 6.2 billion tons of total resources extracted worldwide to satisfy EU consumption and investment. This level of resource use is a key driver of the triple planetary crisis — climate change, biodiversity loss and pollution — both within the EU and, disproportionately, in the countries that supply its raw materials.

The forthcoming EU Circular Economy Act (CEA), expected to be proposed in the second half of 2026, is the most significant opportunity this decade to anchor an absolute reduction target for the EU's material footprint in binding legislation. While the Act is currently framed primarily around a circular material use rate target (doubling from around 12% to 24% by 2030) and the development of a single market for secondary raw materials, this brief argues that circularity targets alone are insufficient. Without a parallel target to reduce overall material consumption, gains in circularity risk being outpaced by growth in absolute material throughput.

Building on the Institute for European Environmental Policy's (IEEP) proposal for an EU resources law, this brief recommends that the Circular Economy Act include a binding, time-bound target for absolute reduction of the EU material footprint, complemented by sectoral milestones, monitoring through existing Eurostat material flow accounts, and measures to address the EU's externalised environmental impacts.

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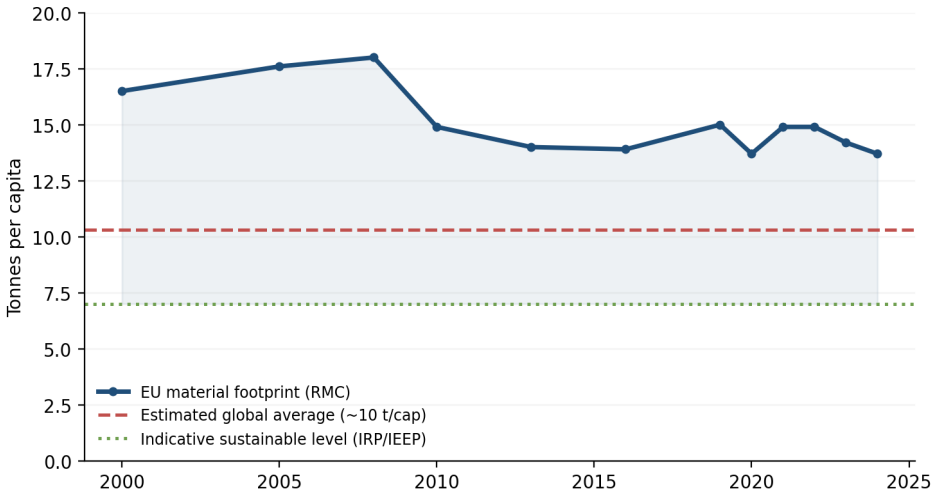
Author: Antoine Oger

1. Europe's Material Footprint in a global context

The EU's material footprint — the total amount of raw materials extracted globally to produce the goods and services consumed within the EU, including the material embedded in imports — has remained persistently high for over two decades. Eurostat data show that after peaking at around 18 tons per capita just before the 2008 financial crisis, EU raw material consumption fell to roughly 14 tons per capita and has plateaued since, reaching 13.7 tons per capita in 2024 (around 6.2 billion tons in absolute terms).

Figure 1. EU material footprint (raw material consumption), 2000–2024, tons per capita.

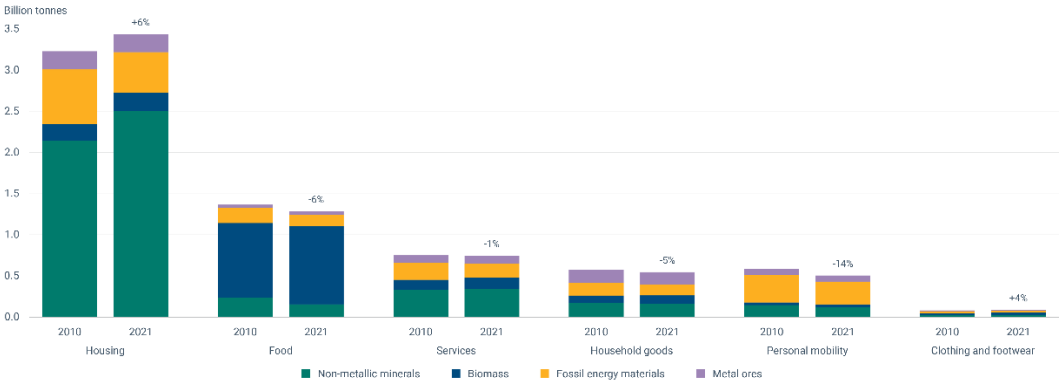


Source: Eurostat; sustainable reference level based on IRP estimates.

This level is considered unsustainable on two counts. First, it is above the global average per-capita material use, meaning EU consumption patterns cannot be replicated worldwide without breaching planetary boundaries. Second, the European Environment Agency notes that, based on historical trends and projections, it is unlikely the EU will significantly reduce its per-capita material footprint over the coming decade without a major shift in policy — undermining the ambition of the Eighth Environment Action Program (8th EAP), which explicitly calls for a significant reduction in the EU's material footprint.

The composition of this footprint matters for policy design. Non-metallic minerals (largely construction materials such as sand, gravel and cement) and biomass represent around three quarters of the EU material footprint (respectively 53% and 24%), reflecting the dominant role of the built environment and food production (figure 2). Consumption of fossil energy materials is on a steep downward trend while metal ores — though the smallest category by weight — are the fastest-growing in strategic importance due to demand linked to the energy transition and electrification of transport.

Figure 2. The EU's material footprint of the six consumption domains (bn of tonnes), for the years 2010 and 2021



Source: Eurostat material flow accounts; EEA, 2025.

As one of the world's largest net importers of raw material equivalents, the EU's material footprint is sustained by extraction occurring largely outside its borders. This 'spillover effect' means that EU consumption choices have direct environmental and social consequences in resource-exporting regions, often in countries with weaker environmental regulation and less capacity to manage extraction impacts.

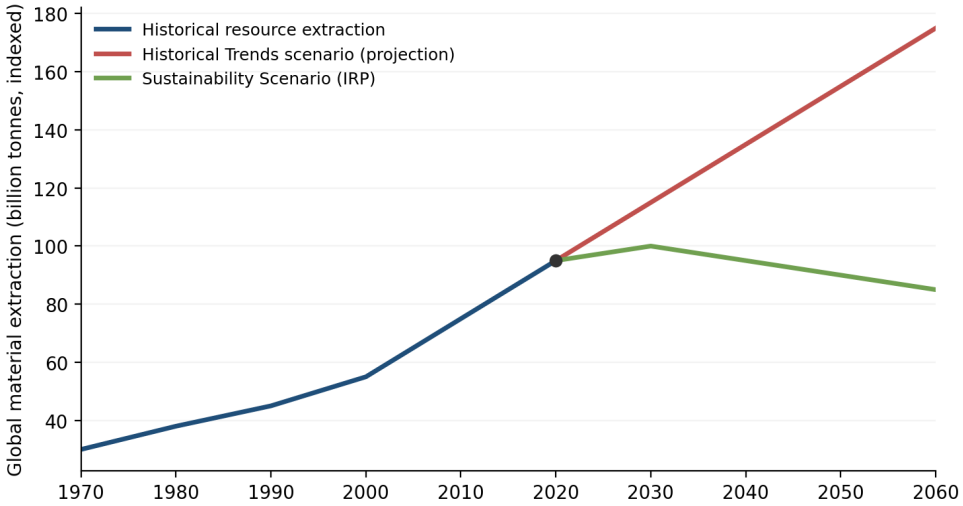
Current assessment of global resource use trends and their environmental consequences are stark and directly relevant to the EU's policy choices.

- Global material extraction has more than tripled over the past five decades, driven primarily by the build-up of infrastructure (housing, mobility) and rising material consumption in upper-middle and high-income countries.
- The extraction and processing of natural resources is responsible for over 55% of global greenhouse gas emissions, around 90% of land-related biodiversity loss, and up to 40% of air pollution-related health impacts.
- Material use continues to grow at an average of more than 2.3% per year, putting the world on a 'Historical Trends' trajectory that is fundamentally incompatible with the Paris Agreement and the Sustainable Development Goals.
- Crucially, these pressures stem largely from consumption and production patterns in industrialised economies — making current resource-use patterns both ecologically unsustainable and globally inequitable.

Yet, alternative 'Sustainability Scenario' from the International Resource Panel (IRP) shows that a deliberate transition toward material efficiency and reduced material throughput —

particularly in housing, mobility, food and energy systems — can deliver substantial reductions in environmental pressure while still supporting human wellbeing (figure 3).

Figure 3. Illustrative global material extraction pathways: Historical Trends vs. IRP Sustainability Scenario (indexed).



Source: adapted from IRP, Global Resources Outlook 2024.

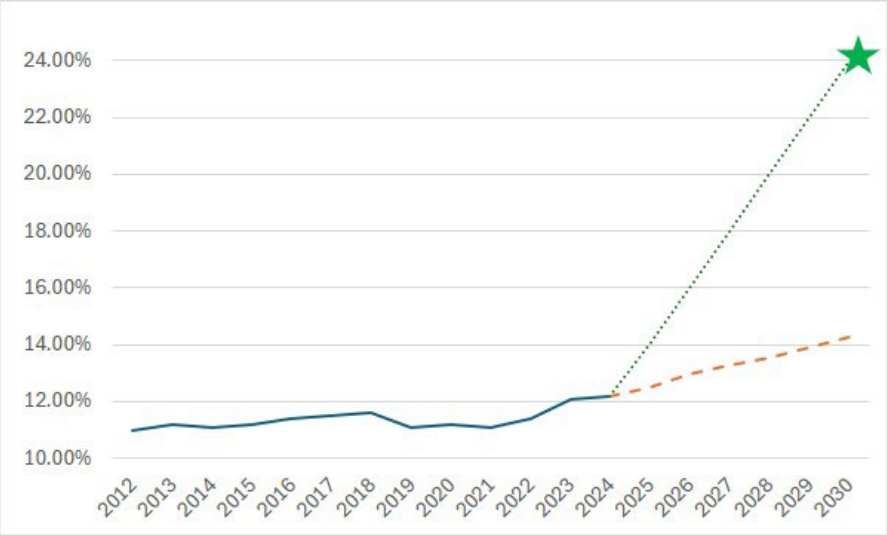
The main challenge for the EU at this point is that domestic circularity measures alone may not be sufficient to address the fact that a large share of the environmental pressure associated with EU consumption is exported abroad.

2. Ambition and limitation of circularity targets

The Circular Economy Act, as currently being prepared by the European Commission under the Clean Industrial Deal, is expected to centre on doubling the EU's circular material use rate from around 12% in 2024 to 24% by 2030. This is a welcome and necessary ambition: at present, almost nine out of every ten material inputs into the EU economy still come from primary (virgin) resources.

However, this ambition faces two existential challenges. First regarding its sheer ambition in comparison with past trends. The EU over the past decade deployed two circularity action plans and a significant number of sectoral legislations yet the circular material use rate remained largely stagnant. It is therefore extremely unlikely that the EU will achieve a doubling of that rate in less than 5 year (figure 4).

Figure 4. EU circular material use rate 2012-2030 vs. 2030 target



Source: author, from Eurostat.

Second, a circularity-rate target measures the share of secondary materials in total material use — it does not constrain the absolute volume of materials consumed. If the overall size of the material economy continues to grow, even a doubling of the circularity rate could coexist with a stable or rising material footprint in absolute terms. We have made this point before, noting that current proposals focus heavily on securing supply of virgin materials to meet projected demand growth, with 'little to no consideration for targets on an absolute reduction of resource consumption.'

This is precisely the gap that a material footprint reduction target would close. Such a target would:

- Provide a headline, outcome-based metric — already collected annually through Eurostat's material flow accounts — against which the cumulative effect of circularity, ecodesign, and product policy measures can be assessed.
- Create a coherent link between the EU's decarbonisation and dematerialisation agendas as absolute reductions in material and energy use are necessary to meet climate goals.
- Strengthen the EU's resource security and resilience by reducing demand for imported raw materials — including critical raw materials — rather than relying solely on diversifying supply.
- Address the EU's 'spillover' impacts on resource-exporting countries by tackling the demand side of the EU's material footprint, not only its domestic management.

3. The case for an EU Resources Law

The Institute for European Environmental Policy (IEEP) set out the case for this approach in its 2024 report 'The Missing Piece of the EU Green Deal — The Case for an EU Resources Law.' The report recalls the challenges associated with the current level of consumption of material resources in the EU, and argues that this excessive extraction, production, manufacturing and consumption needs to be explicitly and legally addressed. As such we recommended an EU Material Resources Law, structured similarly to the EU Climate Law, with the following core elements:

- A legally binding headline target to reduce material resource consumption, anchored in EU law in the same way the Climate Law anchors the 2050 climate-neutrality objective.
- Explicit linkage between dematerialisation and decarbonisation objectives, recognising that climate and energy modelling confirm absolute reductions in material and energy use significantly lower greenhouse gas emissions.
- Safeguards against unintended consequences of the green transition itself — in particular, the risk that decarbonisation technologies (renewables, batteries, electrification) drive a major increase in material demand unless paired with demand-reduction measures.
- Consideration of how such a law would interact with existing and emerging EU legislation, including the Ecodesign for Sustainable Products Regulation (ESPR), the Critical Raw Materials Act, and — now — the Circular Economy Act.

Current EU legislative efforts, alongside targets for secondary material use, tend to focus on harmonising extended producer responsibility systems, facilitate transborder waste shipment, ensuring adequate funding for secondary raw material infrastructure or measures on exports of secondary materials. We call on the European Commission to seize the opportunity of the CE act to cap this exercise through setting a target to reduce the EU's material footprint in conformity with the conclusion of the European Environment Council of June 2024.

4. Policy recommendations for the Circular Economy Act

To ensure the Circular Economy Act delivers a coherent and effective response to the EU's resource use challenge, we recommend that the legislative proposal include the following elements:

1. **A binding material footprint reduction target.** Set an absolute, time-bound target to reduce the EU's material footprint (RMC) — for example, a defined percentage reduction per capita by 2040, with an indicative trajectory toward the sustainable consumption levels identified by the IRP — building on the ambition already articulated in the 8th Environment Action Programme.

2. **Retain and strengthen the circular material use rate target.** The 24% by 2030 circularity target should be maintained and treated as one of several complementary indicators, not a substitute for an absolute consumption target.

3. **Use existing monitoring infrastructure.** Base monitoring on Eurostat's established material flow accounts, avoiding the need for new data infrastructure and enabling immediate tracking of progress.

4. **Sectoral milestones for the largest footprint contributors.** Given that non-metallic minerals (construction) and biomass together account for around three quarters of the EU's footprint, set sector-specific demand-reduction milestones for the built environment, mobility and food systems.

5. **Address externalised impacts.** Incorporate measures — e.g. on secondary material exports, third-country partnerships and supply chain due diligence — recognising the EU's responsibility for the environmental and social impacts of its material footprint beyond its borders.

6. **Coherence with adjacent legislation.** Ensure explicit alignment between the CE Acts material footprint provisions and the ESPR, the Critical Raw Materials Act, the EU Climate Law and other relevant legislations, so that dematerialisation and decarbonisation objectives reinforce one another rather than operating in silos.

7. **Review and ratchet mechanism.** Following the model of the EU Climate Law, include a periodic review mechanism allowing targets and measures to be strengthened in light of progress, new evidence, and updated assessments.

5. Conclusion

The EU's material footprint has remained stubbornly above sustainable levels for two decades, with limited prospect of significant improvement under current policy settings. Meanwhile resource use is the single largest driver of the triple planetary crisis, and industrialised regions — including the EU — bear disproportionate responsibility for global resource pressures. The Circular Economy Act offers a rare and time-limited legislative opportunity to address this at its root by pairing the EU's circularity ambitions with a binding commitment to reduce absolute material consumption.

This would provide the EU with a coherent framework analogous to the Climate Law, converting the dematerialisation agenda from an aspiration into an enforceable policy objective. Without such a target, the EU risks building an economy that may be more circular, yet nonetheless continues to consume resources, and export environmental harm, at an unsustainable scale.

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