

# Position Paper on Circular Economy and a 2050 Vision

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## Summary:

*In this paper, the French Solid Waste Partnership (FSWP) shares its vision on what a **circular economy** might look like **by 2050**, as a lever for a future that is **decarbonised, decontaminated**, and where economic growth is **decoupled** from resource extraction and in balance with planetary boundaries. To this end, the FSWP invites to move beyond a reductive vision focused on recycling to a vision drawing on the circular economy actions presented in ISO 59004 and organised according to the life cycle (13 circularity actions, ranging from consumption avoidance to the recovery of historic landfill sites) and on three inseparable objectives: **reducing environmental and health impacts, maintaining an economy that creates value and jobs, and ensuring the sovereignty and resilience of the systems underpinning our society.***

*Such a transformation appears necessary to achieve the 2030 Sustainable Development Goals (SDGs), and in particular a “3-D Future” - decarbonised, decontaminated and decoupled. Yet, it raises major planning challenges that require broader foresight work and coordination between multiple actors at the local, national and international levels. These challenges bring about number of questions: what are the pathways for reducing the material footprint per material? How to accelerate the circular design of goods and the supply chains transformations? How to manage the additional costs and gains of the circular economy compared to the linear model? How should taxation and redistribution systems evolve? What will be the impact on employment and skills, and on the restructuring of local infrastructure and activities? These questions shed light on the need to consider these transformations in a cross-sectoral manner. Thus, the circular economy is not to be considered in isolation, but rather as a framework for understanding and guiding all future transformations. It is in this spirit that the FSWP aims to promote a coherent international advocacy campaign in which **resources and waste management** is recognised as a **cornerstone of sustainable development**. This advocacy is being implemented through the “**Global Push**” initiative, led by the FSWP, which aims to bring together all stakeholders so that the necessary changes can be designed and implemented by all, for everyone and for each local context, in particular through the development and adoption of a Global Commitment on Resources and Waste.*



## 1. Circular economy: definition and purpose

Given the imperative of ecological, economic and social transition as reflected by the 2030 Agenda's Sustainable Development Goals (SDGs), the French Solid Waste Partnership (FSWP) is contributing to international discussions on what a **circular economy** could *ultimately* look like in **2050**, both in France and around the world. The FSWP's international advocacy draws on the observation that circularity is not an end in itself. The ultimate goal is not to "increase recycling" or "close loops" *per se*, but to achieve Sustainable Development Goals (SDGs), and in particular to build a future that is **decarbonised, decontaminated** and where growth is **decoupled** from environmental bads including resource extraction– and therefore from waste generation. We refer to this goal as the "3-D" vision, a term also used by some of our international partners.

The FSWP's vision is to support two global parallel transitions: on the one hand, the implementation of environmentally sound, economically viable and socially fair management of all waste in all countries; and on the other hand, prevention, with the aim of reaching "zero wastage" by transforming waste that cannot be avoided into resources. These two transitions require us to move beyond a fragmented approach – waste on one side, circular economy on the other – and think holistically about the **management of objects, materials, energy and ultimate waste**, while contributing to bring human activities within the planetary boundaries<sup>1</sup>.

In public debate, circular economy is often reduced to recycling. However, recent international work – in particular the ISO 59004 norm, adopted in 2024, which breaks down the "10R" principle<sup>2</sup> into **13 actions** ordered according to the life cycle – shows that a complete circular economy begins well before recycling and continues well beyond it. Refusing and avoiding some products or uses, rethinking the needs, adapting production through eco-design, reducing resource consumption, reusing, repairing, reconditioning, remanufacturing, repurposing, recycling, recovering energy, and even recovering materials stored in historic landfill sites: these actions form a **coherent scale** where recycling and energy recovery are at the bottom, once all the levers of reduction, moderation, sustainability, reuse and repair have been activated.

These coordinated actions only make sense when viewed in the context of the objectives they seek to achieve. The first objective is to **reduce environmental and health impacts** throughout the life cycle of products and molecules: extraction, production, transportation, use and end of life. The aim is to reduce pollution that affects health and the quality of water, soil and air, to prevent biodiversity loss, to enable ecosystem regeneration and to reduce greenhouse gas emissions. The second objective is to **maintain an economy that creates value and jobs** and is capable of supporting chosen social redistribution systems. Rather than continuing to produce ever more material goods, it implies developing value in services such as usage, maintenance, repair, remanufacturing and circular system management. The third objective is to **ensure resource sovereignty and resilience**: in a world where the average global material footprint (currently around 12 tonnes per capita per year, with significant geographical disparities) far exceeds the planet's capacity for regeneration, the ability to

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<sup>1</sup> The planetary boundaries were first introduced in the 2009. See: Rockström, J. et al. (2009). Planetary Boundaries: Exploring the Safe Operating Space for Humanity [online]. *Ecology and Society*, Vol. 14, No. 2. [Last consulted 13 March 2026]. Available at: <https://www.jstor.org/stable/26268316>. The planetary boundaries have been updated since, see for instance: Richardson, K. et al. (2023). Earth beyond six of nine planetary boundaries. *Science Advances* [online], Vol. 9, No. 37. [Last consulted 13 March 2026]. Available at: <https://www.science.org/doi/10.1126/sciadv.adh2458>

<sup>2</sup> Kirchherr, J. et al. (2017). Conceptualizing the circular economy: An analysis of 114 definitions. *Resources, Conservation & Recycling* [online], No. 127. p. 224. [Last consulted 13 March 2026]. Available at: <https://doi.org/10.1016/j.resconrec.2017.09.005>.





manage material consumption – in terms of volume and type of resource – is becoming a strategic issue. France is subject to the risk of a shortage of virgin raw materials, with annual needs estimated at ~14 tonnes/capita/year<sup>3</sup>.

The "material footprint" indicator used for SDG 12.2<sup>4</sup> provides an initial macro-environmental basis, but it should be broken down **per major material category** (critical metals, minerals, biomass, oil, etc.) in order to finetune industrial, trade and innovation policies. Only at this level can we articulate circular economy, resource sovereignty and climate trajectory: reducing demand for virgin materials, increasing the share of recycled raw materials, and managing waste flows as "stocks" to meet future needs, while protecting health and the environment.

With this perspective, the FSWP suggests to reinforce the well-known "3R" approach (reduce and refuse<sup>5</sup>, reuse, recycle) with a **"3-D" vision: decoupling** economic growth from resource consumption and waste production; **decontaminating** to protect health, biodiversity and quality of life; and **decarbonising** to follow a trajectory that is as compatible as possible with the 1.5°C target of the 2015 Paris Agreement. The circular economy then becomes a powerful means of achieving this three-dimensional transformation, rather than just another area of public policy.

## 2. 2050 horizon: what level of circularity is needed to achieve a "3-D Future"?

To portray what a circular 2050 horizon might look like, the FSWP proposes a vision exercise, which involves establishing a desired future without examining the path to get there. Today, our production methods remain dominated by the manufacturing of products that are not very durable or repairable. Our economic models are based on individual ownership of goods and unsustainable consumption. The reuse and repair economy exists but remains largely confined to the social and solidarity economy. Many countries, particularly emerging economies, rely more or less on an informal sector which, often in precarious conditions, contributes to the circular approach when economically viable. Waste management in France is managed through partial recycling, energy recovery and landfilling, while the whole system contributes to exceed the planetary boundaries in terms of pressure on natural cycles and emissions. Abroad, many countries make extensive use of practices that do not comply with Environmentally Sound Management (ESM)<sup>6</sup> of waste (open burning, incineration without flue gas control, or poor landfilling practices). Open dumping exists everywhere in the world on a larger or smaller scale, either due to an inability or unwillingness to pay the price of treatment, or due to a lack of treatment options available to local actors.

In a 2050 scenario compatible with the "3-D" vision, the situation is profoundly different. The volumes of virgin raw materials extracted are drastically reduced (by a factor of two to three) due to the dual effect of the reduced need for new products and therefore materials, and to a much higher proportion of recycled raw materials. Products are designed to last, be repairable

<sup>3</sup> This reference cites a material footprint of ~14t/capita in 2018 in France, equivalent to the European average: <https://www.statistiques.developpement-durable.gouv.fr/edition-numerique/economie-circulaire/5-empreinte-matieres>

<sup>4</sup> Indicator 8.4.1, also included in 12.2.1, is the material footprint indicator, all materials aggregated. See <https://unstats.un.org/sdgs/indicators/indicators-list/>

<sup>5</sup> The concept of "reducing" in the 3R strategy includes that of not using. In other words, "refusing" to use a new physical resource to meet a need, or even not creating a need for use and therefore not using any physical resources.

<sup>6</sup> Environmentally Sound Management of waste is defined by the Basel Convention, which is legally binding for the 191 Parties having ratified it. See articles 2(8) and 4(2), <https://digitallibrary.un.org/record/788324?v=pdf>





and – as a last resort – recyclable. The economy is organised around **models of functionality or performance**, in which the producer or lessor retains ownership of the good or responsibility for its end of life, which aligns their incentives with durability, repairability and caring practices with goods. Consumption becomes more rational, because the supply of goods and services is reoriented towards fulfilling needs while remaining within planetary boundaries by intensifying the use of already available manufactured goods rather than manufacturing and producing new ones. Reuse, repair, reconditioning and remanufacturing activities are no longer marginal: they are a structural part of the economic fabric, with stable business models and social and professional recognition.

In this 2050 scenario, waste management systems also evolve: all waste worldwide is managed in compliance with ESM; recycling is enabled through improved design banning the use of harmful substances unless these products are treated as hazardous waste; open dumping is minimised through greater traceability and fewer intermediaries thanks to the economy of functionality and to a culture of care for objects established through education. A small amount of waste remains to be treated: the return of organic matter to the soil is ensured by high-quality upstream sorting by users and adequate packaging; recycling of materials is supported by industries capable of providing regular, standardised and traceable flows; energy recovery focuses on residual volumes. The recycling economy is complemented by a growing economy of spare parts and components that are as standardised as possible, which extends the life of equipment and supports large-scale remanufacturing. The whole system is part of an economy based on **existing stocks rather than flows**: value chains are no longer primarily organised around intercontinental flows of virgin materials and new products, but around stocks of objects and materials available locally, in constant rotation between uses, maintenance, repair and recycling. This reconfigures the geography of production, infrastructure and jobs: less dependence on long-distance transport and on extractive industries, while increasing the need for local skills in maintenance, stock management, detailed logistics and services. Beyond the issue of the availability of materials and stocks in local areas, industrial relocation can also be a socio-economic strategy in itself, supported by government regulatory and financial planning.

In this transformation, the rise of **data and artificial intelligence** is playing a catalytic role, particularly in the implementation of pre-recycling actions: digital product passports, platforms that connect users with existing products, and tools for optimising flows and stocks through the implementation of circular supply chain expertise make it possible to significantly increase the usage rate of goods already present in the economy. Economic players whose core business is stock management (and not solely goods manufacturing) are emerging, as has happened in the mobility sector with sharing platforms.

Such a shift raises fundamental questions, which require broader forward-looking work. What will be **the additional costs and net gains** of the circular economy compared to the current linear economy, and how can the immediate additional costs (better-designed products, repair services, circularity infrastructure) be absorbed when the benefits (health, climate, sovereignty) are long-term and often diffuse? What regulatory and commercial framework is needed to prevent countries embarking on this transition from being penalised compared to those that continue to produce at lower cost using resource-intensive and pollution-generating models? What **tax system** should be considered in a world where fewer goods and more services are produced, and how can the sustainability of social protection and redistribution systems be guaranteed in this context? What professions and skills should be developed for circular economic activities, what investments should be made in education and training, and how can a just transition be organised for regions and sectors that depend on current linear models?





While the 2050 horizon may seem too distant, the activities and changes required to achieve this situation, towards a “3-D Future”, are beginning to take shape, often at the local or intra-sector level. The conceptual foundations laid out and issues raised above highlight the extent to which a coherent circular economy for 2050 cannot be conceived solely at the national level. Planetary boundaries – climate, biodiversity, pollution – are global, and the question of how to **share** between countries **the responsibility to maintain global activities within these boundaries** is being discussed at the United Nations Environment Assembly. However, the issues of pollution, waste, resources and the transition to circularity are addressed in a fragmented way by several multilateral bodies, such as the International Resource Panel, the COPs for the Basel, Rotterdam and Stockholm Conventions, and in debates on the future “plastics treaty”. The FSWP’s advocacy aims precisely to promote, in these forums, a vision in which resources and waste management – including the transition to circularity as detailed in this Note – is recognised as **the cornerstone of sustainable development and a prerequisite for the success of all other agendas** – climate, biodiversity, sustainable cities, water, and health.

All these changes require us to think of the circular economy not as an additional sectoral policy, but as a **cross-cutting framework** for understanding the transformations to come at national and international level: transformation of the productive apparatus, business models, taxation, employment, local organisation of the territory and international cooperation. Only by moving beyond silos can the issues raised, which are incremental to progressive change, be addressed. The FSWP is aware of and regrets the lack of an international forum where all stakeholders can come together to collectively reflect on these changes. That is why it is spearheading the implementation of the international “Global Push” initiative, to support building a circularity strategy aimed at achieving a truly sustainable, decoupled, decontaminated and decarbonised future, for the dignity and well-being of all. The initiative identifies the implementation of sustainable resources and waste management as a key lever, based on common indicators to measure progress, in particular the implementation of an improved “material footprint” indicator. The “Global Push” initiative promotes a Global Commitment on Resources and Waste that brings together the necessity to transform our economies and that of protecting our health and the environment. It mobilises across sectors and stakeholder groups to strengthen cooperation and coordinated international action around a shared vision.

### 3. We call for...

We call for relevant **data and indicators** that can be easily adapted to local contexts, in order to guide public policies tailored to each local context, motivate change at all levels, and measure progress towards a “3-D Future”. Although the SDG framework already takes into account a number of indicators (collection and recycling rates, food loss index, and aggregate material footprint), the FSWP proposes additional indicators that would facilitate the achievement of these goals:

- Material footprint by type of material/flow, to complement the aggregated indicator
- Waste characterisation (quantity and nature of waste produced)<sup>7</sup>
- Circular product management systems:
  - Reuse and repair rates<sup>8</sup>
  - Reconditioning, remanufacturing and refurbishment rates<sup>9</sup>

<sup>7</sup> Improvement to the SDG 11.6 indicators

<sup>8</sup> To be proposed as new indicators for SDG 11.6

<sup>9</sup> To be proposed as new indicators for SDG 12.5





- Level of waste management systems (to manage non-recyclable resources). Proportion of waste managed by the following means:
  - Open dumps, or landfills and/or incineration facilities that are not complying with the Environmentally Sound Management of waste guidelines by the Basel Convention
  - Engineered landfills and/or incineration with purification of combustion gases/fumes
  - Energy recovery
- Health and environmental costs of waste management practices (or other method to assess environmental bads – explore the One Health approach?).

These indicators are key to accelerating the transition to circularity. International reporting enables tracking progress and identifying the additional support needed to unlock local action. National and local level monitoring of these indicators enable the definition of action plans. We call for their implementation as soon as possible.

We call on stakeholders around the world, including governments, to endorse the “**Global Commitment on Resources and Waste**”, as a necessary commitment to achieve the SDGs, while its success is itself dependent on the progress made on several SDGs.

The Global Push initiative aims to bring together all stakeholders to collectively address the issues detrimental to the environment, society and the economy. A shared vision, a shared Commitment, and a space for collaboration is needed to accelerate the transition to circularity.

