

Circular Economy & Waste Management

GRI Standards:

306 Waste

PLANET CARE

At Sanofi, the dedication to improving people's lives goes beyond innovations in healthcare. As a global organization, Sanofi also bears great responsibility in caring for the planet. Every day, Sanofi is minimizing the environmental impacts of its products and activities while strengthening its business resilience in the face of environmental changes.

Through the Planet Care program, Sanofi sets clear goals and is mobilizing employees, partners to join in taking action for the planet.

- **Fight climate change:** build the road to net zero emissions by 2045 with an intermediate carbon neutrality trajectory for by 2030, on a 1,5°C science-based emission reduction trajectory
- **Limit our environmental footprint and aim for circular solutions** by optimizing the use/reuse of resources and reducing impact of emissions
- **Improve environmental profile of products by** delivering eco-innovative products and by fostering a sustainable use of medicines
- **Mobilize our people for environmental sustainability** by promoting an environmentally conscious culture in the workplace
- **Engage our suppliers in our environmental ambitions by** sourcing responsibly and leading by example

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1. Our commitments to Circular Economy and Waste Management

Circular economy is a model inspired by nature that advocates a **more frugal and optimized consumption of resources**, and a **limited generation of waste**. It is a model of production and consumption, which involves sharing, leasing, reusing, repairing, remanufacturing, and recycling existing materials and products **as long as possible**, in order to extend the life cycle of products. It embodies the objective of going beyond impact reduction towards a model of value creation that is socially, economically, and environmentally positive.

The circular economy is based on **three principles**, driven by design:

- eliminating waste and pollution,
- keeping products and materials in use,
- and regenerating natural systems to decouple economic growth from the consumption of finite resources.

The implementation of projects to promote the principles of the circular economy benefits the environment but can also benefit companies' customers and businesses. The **benefits to the customer** relate to the delivery of greater value through improved quality and performance. The **economic benefits** to the company include higher financial performance thanks to increased competitive advantage (as more and more customers consider the environment in buying decisions), stronger customer relationships and loyalty, and cost savings through reduced material use.

Much more than waste reduction, the circular economy is a tool for **closing resource loops** throughout our value chain. The implementation of the short loop concept impacts the entire value chain, from design and supply to manufacturing, consumption, and end-of-life, and as such requires dedicated governance, coordination and communication, and specific levers at each step.

2. Performance

How is Sanofi measuring its performance in Circularity?

Our work focuses on the totality of the waste that the company is generating:

1. Post-industrial waste:
 - By 2025, at least 90% of our waste are Reused, Recycled or Recovered as part of our 3R program.
 - By 2025, 100% of our sites are landfill-free. (note : a site is considered as landfill-free when its landfill rate <1% (linked to regional structure in place and local regulatory requirements).
2. "Post-consumer waste" which consists essentially in packaging & injectable devices.
 - By 2027, 100% of our syringe's vaccines packaging will be blister-free

As on-going targets are close to be achieved, we are working on new objectives for post-industrial & post-consumer waste.

Our results in 2023

- Post- industrial waste
 - We have been able to reuse, recycle, and recover 88% of our operational waste. (86% in 2022).
 - 2% of our waste go to landfill (for 5% end of 2022), and 72% of our sites are landfill free.

- Post-consumer waste
 - 39% of our vaccines packaging are blister-free.
 - 7 Pilots, 1 in South America (Argentina) , 2 in Europe (Denmark, Germany), and 4 in Asia (Vietnam, Thailand, Singapore, Philippines) were testing take-back and recycling programs of injection devices.

Waste (tons)	2023	2022	2019 (baseline)	Change vs 2019 (%)
Hazardous waste				
Recycled hazardous waste	8.417	9.051	17.976	-53%
Hazardous waste incinerated with energy-recovery	35.171	38.311	40.124	-12%
Hazardous waste incinerated without energy-recovery	14.938	13.837	14.726	1%
Hazardous waste sent to authorized landfills	234	207	513	-54%
Sob-total: hazardous waste	58.759	61.406	73.338	-20%
Non-hazardous waste				
Recycled non-hazardous waste	76.562	70.608	69.252	11%
Non-hazardous waste incinerated with energy-recovery	24.041	22.492	21.753	11%
Non-hazardous waste incinerated without energy-recovery	1.153	1.280	2.315	-50%
Non-hazardous waste sent to authorized landfills	3.577	7.773	11.542	-69%
Sob-total: non-hazardous waste	105.332	102.154	104.862	0%
TOTAL hazardous and non-hazardous waste	164.091	163.560	178.200	-8%

The company has registered a slight increase of the total waste quantities in 2023 vs 2022 (+0,3%) but **decreasing trend by -8% vs baseline (2019)**. Considering the significant growth (+5,3%) of our sales vs 2022, we can consider our engagement to reduce quantity of waste in a dynamic market perspective.

The hazardous waste quantities decreased by 5% in 2023 vs 2022 due to less production volume in one of our sites because of a temporary plant shutdown.

The non-hazardous waste quantity increased by +3% in 2023 vs 2022 due to a significantly increased production in two Sanofi sites, one in France, and one in the US. A big improvement was made for non-hazardous waste sent to authorized landfill that decreased by nearly 4,000 tons, due to eggs waste switch to composting in one of our facilities in the US. This is the result of three years' preparatory work, from impact studies and reconfiguration of packing through to securing licenses.

NB: Data provided in this section relates to waste from Sanofi's production activities. Data for waste not related to our production activities and for non-recurring waste are not consolidated here; this can include waste generated by construction of new buildings or decontamination of land, and other types of non-recurring waste generation. Our total waste disposed data is certified by statutory auditors and published in the URD.

3. Actions

Sanofi believes that implementing the principles of the circular economy plays a key role in its journey towards net zero in 2045, as well as in achieving its other environmental commitments, on biodiversity, water consumption, waste, eco-design etc.

As drugs and vaccines are not ordinary goods, this implementation remains a big **challenge** for the pharmaceutical industry. Medicines must meet many different regulatory requirements to ensure the **quality** of each unit sold. Market launch authorization for drugs and vaccines requires **regulatory approval** from health authorities, analyzing quality manufacturing procedures, as well as strict **safety** standards for active ingredients, excipients, medical devices, and packaging materials. Health authorities must also approve any significant changes in the processes, substances, or materials used to manufacture a drug or vaccine, including environmental risk assessments. All these requirements are barriers to change towards greater environmental sustainability.

To accelerate its transition to a circular economy, we are developing a dedicated circular economy roadmap that aims to close the loop on its entire value chain:

1. Promote sober and sustainable procurement;
2. Eco-design our products and processes;
3. Encourage industrial symbiosis to optimize resource management;

4. Develop health as a service and functional economy principles;
5. Promote responsible consumption of our products;
6. Extend the useful life of our products; and
7. Reduce our waste and better reuse and recycle it.

Promote sober and sustainable procurement

Sustainable procurement is the integration of CSR principles including environmental sustainability in procurement processes. It now seeks to look beyond compliance matters and to see the pursuit of environmental and social performance as a core requirement.

For the circular economy, sustainable procurement translates firstly into an approach of **reducing the consumption** of natural resources and materials, and then into reducing the environmental impacts of the materials used, focusing on **renewable, bio-based materials, secondary** (recycled content) raw materials and in all cases materials from certified and traceable sources.

We recognize that sustainable sourcing is essential to reducing its overall impact. The principles of sustainable sourcing help preserve natural resources, reduce the environmental footprint, and protect and promote biodiversity on sites.

From a purely circular perspective, sustainable procurement is prioritized along 2 lines of work:

- Build sustainability performance as a standard
- Limit the impact of API and major ingredients production on the environment.

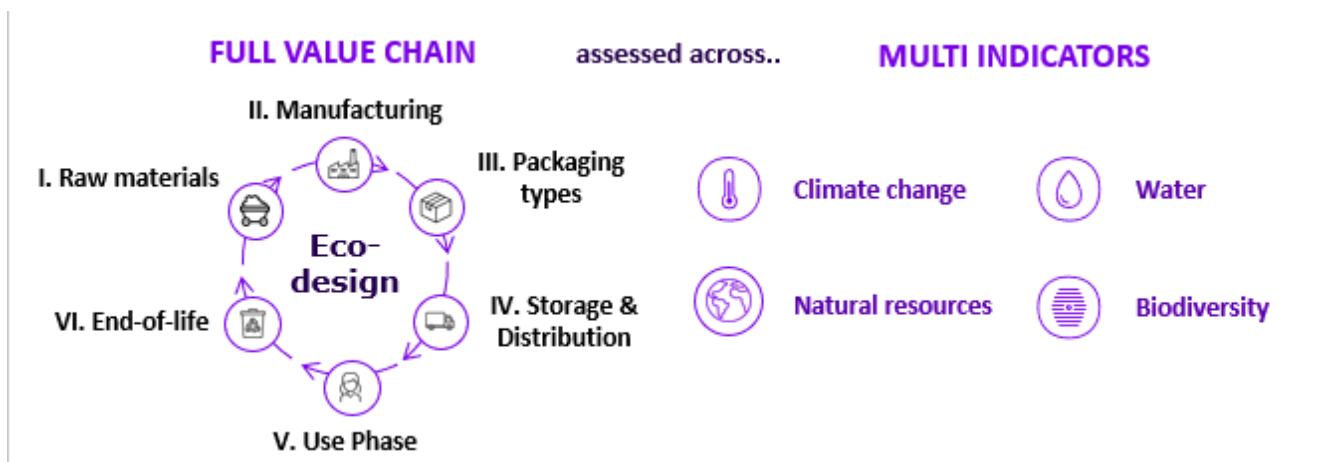
For more information on our overall Sustainable Procurement Strategy, aligned with the UN Global Compact, see in our [Document Center](#) the Sustainable Procurement factsheet.

Eco-design products and processes

Eco-design is the cornerstone of our environmental sustainability strategy and one of our Corporate Social Responsibility flagships.

Eco-design is a “rethink” approach that aims to improve our medicines’ environmental performance by integrating environmental criteria into our product design and development. To reduce the overall product environmental impacts, we have a holistic approach which considers:

- All steps of the life cycle (Raw material extraction & transformation, Manufacturing, Packaging, Distribution, patient use phase, End of life treatment)
- Multi-criteria indicators (Climate change, water scarcity, resource depletion, circularity ...).



This science-based expertise allows us to evaluate potential environmental impacts and take action to provide eco-innovative products.

That is why we are committed to deliver the following:

1. By 2025, 100% of our new products will be eco-designed
2. By 2027, 100% of our syringe's vaccines packaging will be blister-free
3. By 2030, 100% of our top-20-selling products will follow an eco-design approach

Many projects are already implemented with this mindset, such as fostering a responsible consumption of raw materials, energy, or water for manufacturing activities, recycling solvents, including ecotoxicity concerns in our R&D pipeline, improving our supply chain sustainability, promoting responsible use & disposal of medicines by patients.

To give one example on Eco-design for new devices: TouStar Toujeo® as first-in-class reusable pen won the Eco-Design award at Pharmapack as well as the Good Design award 2022.

Eco-design being a particularly important pillar for Sanofi, a dedicated factsheet is available on the [Document Center](#): Eco-Design Factsheet.

Encourage industrial symbiosis to optimize resource management

Industrial and territorial ecology, also known as industrial symbiosis, is a form of cooperative organization between different actors (inside or outside Sanofi) of the same territory. It aims at optimizing the use of available resources between these actors to implement loops between actors in a collaborative way: energy, water, materials, waste, but also equipment and expertise. This organization makes it possible to make financial savings while reducing the overall environmental impact.

To promote industrial synergies, we aim to:

- Capitalize on internal synergies: leverage internal synergies and sharing of best practices to pool efforts across the group needed to achieve environmental objectives.
- Develop synergies with external players: develop opportunities for cooperation with other industry players at local level.
- Commit to the preservation of local resources: cooperate with local actors (industry, NGOs, local communities) for environmental action plans in industrial areas.

We promote local economic development by encouraging the sharing of infrastructures that are necessary for the manufacture of vaccines and drugs, by promoting projects to share materials with local economic players or by promoting intensification of building use to avoid new office construction.

To give one example, at our Frankfurt site, a fully integrated BioCampus has emerged from our long-standing core competency in diabetes and the associated insulin production. Here, we cover the entire value chain from research and development to production and manufacturing for modern biologics. A perfect environment for an optimized resource management.

Develop health as a service and functional economy principles

The economy of functionality consists in moving from the sale of pharmaceutical products to the **sale of health preservation solutions**. This economic model induces deep transformations in the modes of production and consumption: consumption without ownership of goods, strategic investment in the intangible resources of the company (development of employees' skills to match the new needs of the model, cooperative management, etc.), developing new business models, developing long term partnership relationships with customers, etc.

As Sanofi conceived it until now, it was mainly about developing digital services to complete the product offer. For example, an initiative has been launched on digital leaflets, allowing free access and usage of the information, without having to print the booklet in each box of medicines.

By considering health as the ultimate end product, Sanofi has identified the potential of preventive treatments, with the objective of doing more with less resources. Moving towards a more preventive and less prescriptive health system would give back an image of health as a service, and thus a way to preserve health before curing it. In a system where health is a service, many economic models can be imagined, to deliver good health offers, more adapted to the needs of the patients; and thus limit the prescription as a last resort solution.

As examples:

- With Sanofi as the initiator, more than 20 partners with a common goal are behind "Knowledge what matters in diabetes: [Healthier under 7 PLUS](#)". We listen to people with diabetes, provide answers to their open questions, and support them with information and services to help them live a better life with the disease. Whether it's exercise and nutrition tips, prescriptions, informative brochures, or testimonials from those affected, we have information about diabetes.
- Sanofi has been involved in the **polio eradication** fight from the beginning and continues to play a critical role in the delivery of polio vaccines.
- Beyfortus is the first and only single-dose RSV passive **immunization** for the broad infant population.

Promoting a sustainable use of medicines

We promote the **sustainable use of medicines**, with 2 measures, at country level:

- Firstly, disease **prevention** through vaccines, diabetes pre-treatment promotion and precision prescriptions which support the avoidance of waste.
- Secondly, **awareness** campaigns on the right way to use medicines. (e.g.: Australia return unwanted medicines initiative in partnership with local authorities to raise awareness on proper medicine use and disposal. To date over 600,000 kg of unwanted medicines have avoided landfill thanks to this campaign).

Opportunities and examples of sustainable use of medicines are presented in the Pharmaceuticals in the environment factsheet in our [Document Center](#).

Extend the life duration of our products

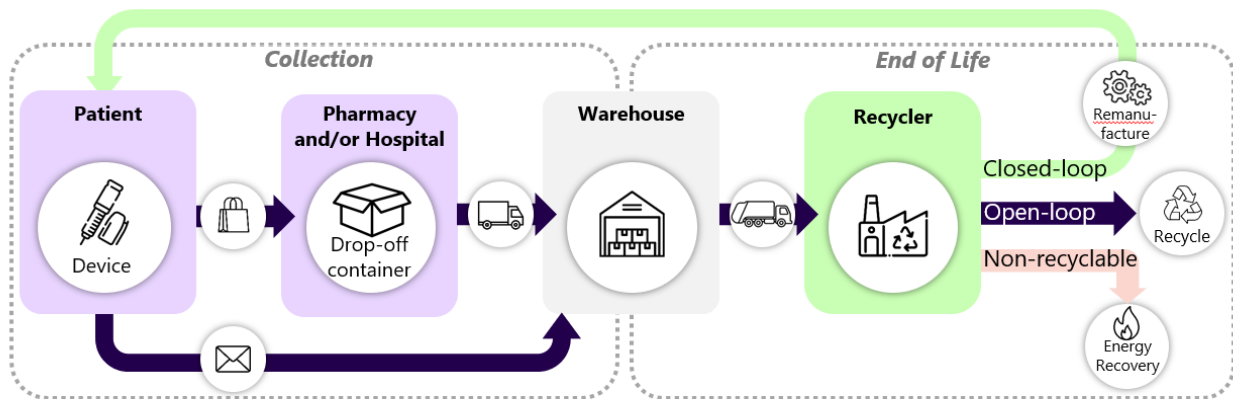
Extending the lifespan of manufactured products (medical devices and medicines) is one of the levers to significantly reduce our environmental impact. This contributes to the prevention of waste, but also to the reduction of the extraction of new resources.

We identify three main areas of work:

- Extend the shelf life of drugs
- Phase out single-use plastics and promote refillable packaging
- Invest for medical devices reusability expansion: technical functionality, reparability, etc.

Take-back systems of post-consumer waste

A take-back system aims at ensuring a process of recovering, separating, and recycling of our products either in closed-loop or open-loop.



Take-Back System Essentials: Key Elements and Main Environmental Considerations

Concerned about its extended responsibility as a producer, we have launched several take-back programs for used medical devices. Focus is to collect the diabetes pens after patient use as they are made of plastic, glass, and metals. Then, we make sure that the collected pens are given a new life rather than ending up as waste. As of July 2024, the following programs are in place:

World's first industry solution for recycling injection pens in Denmark

Sanofi, Novo Nordisk, Lilly and Merck have partnered to pioneer the world's first cross-industry solution for recycling materials from injection pens. The collaboration has been launched in Denmark, because of the existing recycling infrastructure in the country. Today, the four companies account for around 6 million injection pens in Denmark annually.

This collaboration started on May 1st, 2023, and will help us to accelerate our commitments to improve the responsible and proper disposal of medical devices. It is using pharmacies countrywide for the drop-off.

The first recycling program for injection devices in France

RECPEN is the industry collaboration with Sanofi, Eli Lilly, and DASTRI using pharmacies to collect medical injection devices in four pilot regions: Auvergne-Rhône-Alpes, Grand Est, Hauts-de-France and Occitanie started July 1st 2024.

Medic Acción, the Argentinian pilot finished in Buenos Aires

This pilot was started in August 2022 to collect Lantus SoloStar pens in 27 pharmacies in Buenos Aires. The pen caps were recycled mechanically whereas the rest of the pens was incinerated. The program ended in March 2024.

PenLife, the German pilot successfully finalized in Berlin

The pilot phase of the PenLife recycling initiative started in April 2023. A total of 35 pharmacies supported our initiative and actively helped to collect used SoloStar insulin pens from their customers. The feedback on the basic idea of our initiative, the type of collection and the information and service materials offered was consistently positive from the pharmacy employees and the customers addressed. The many responses have shown us that topics such as sustainability, protection of natural resources and reducing the ecological footprint affect many people in Berlin.

The program was finalized in July 2024 and the collected results are now assessed and will help for the set-up of future take-back initiatives.

UK, RePen

The countrywide RePen envelope system using postal services for sending used pens back to Sanofi started in April 2024. The main purpose of this take-back program is to study the patient acceptance of an envelope system and to investigate where the recycled materials can be of the greatest use.

Other take-back systems for diabetes pens are in place in Asia:

Vietnam, Philippines, Singapore, and Thailand.

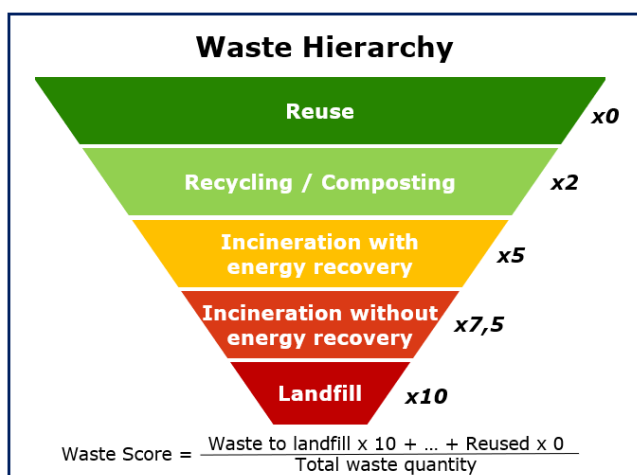
Reduce our industrial waste, better reuse and recycle

Waste can have impacts on natural ecosystems and human health if not properly managed. At the end of their life cycle, pharmaceuticals can end up in the environment, because of medicines consumed and then excreted by patients, or because of an inappropriate disposal of unused or expired medicines. The implementation of the circular economy can help reduce the impact on biodiversity of pharmaceuticals' end of life mismanagement.

In addition, the growing scarcity of non-renewable resources makes it essential to consume these resources efficiently, hence the urgency of waste prevention, and the recovery of existing waste through reuse, repair/refurbish, recycling and energy recovery.

As a pharmaceutical company, Sanofi believes it is important to both reduce the environmental and health impacts of waste and also to improve resource efficiency. As part of its Planet Care program, waste management is a key approach to take actions about resource depletion and is committed to reduce the impact of its waste on the environment.

The sites waste management is following local regulation and our respective HSE standard. Compliance of both is checked regularly with audits performed internally as well as by external parties. We also perform punctual waste mapping with key emitting sites with the will to improve waste management performance and find and implement new opportunities of 3R (reduce reuse recycle).



To digest the complexity of waste hierarchy (reduce, reuse, recycle...), we developed a normalized single **Waste Score** that helps to better understand if a site is well on track to climb the waste hierarchy. The waste quantities of the different layers are multiplied with a weighing factor, summed up and the sum is divided by the total waste quantity. The lower this waste score, the higher the waste management is in the waste hierarchy and the lower the impact to the environment (see picture). This enables us to track our progress on circularity.

To illustrate our work all along the waste hierarchy, here are some clarifications.

REFUSE / PREVENT

The most virtuous action in circularity is to prevent from waste generation at its roots in the production process. We are taking actions on the "Refuse" concept which is a higher transformation lever:

1. PVC-free initiative started in 2022: see Eco-design factsheet
2. Blister-free vaccines initiative is removing plastic in secondary packaging: see Eco-design factsheet
3. Eco-design concerned substances list is banning the usage of some components: see Eco-design factsheet

REDUCE

The site of Aramon has the Project to dry its sludge (85% of water) and reduce the quantity of incinerated waste.

In France, many sites (tertiary, R&D and industrial) have already started taking action to **combat food waste**. They implemented organizational initiatives that can be classified into three categories:

- reduction of waste at the source, by respecting precise weights set out in contracts and by regular surveys, particularly during low attendance periods;
- responsible food management and matching quantities to needs, establishing a "just-in-time" flow for certain stands, asking people to pay for bread to avoid routinely taking bread that then goes to waste, reducing offerings at the end of the service and introducing payment by weight (self-service salads and fruits); and
- management of leftovers and waste at the end of the chain by reusing vegetables from the day before, installing sorting bins for better waste recovery, and setting up contracts for food donations with approved associations for people in need

REUSE



Some of our solvents are treated on-site after use so they can be reused, and hence are not counted as recovered waste. In 2023, **56% of solvents were regenerated** and reintroduced into the industrial process. This avoided generating the same amount of waste.

- In Val de Reuil, a French Vaccines site, we created a take-back loop with the cryopaks (cold packs) received from our supplier. This enables us to reuse these packs and reduce waste quantities and CO2e emission.
- In 2 French sites based in Ambares and Tours, we created a take-back loop with the pallets of our packaging supplier, saving 2078 pallets in Ambares in 2023 vs 2022 and 2780 pallets in Tours on 1st semester of 2024 vs same period of 2023.

RECYCLE

In Frankfurt, Germany, we're working with one of our suppliers to recycle the **2.1Mio trays** used every year in the production of insulin pens. The supplier now produces new high-quality trays based also on recycled material. This will save **840 tons of CO2e and 4,620 m³ fresh water every year**.



RECOVER (energy recovery)

To avoid landfilling, we apply when possible, a process where the energy generated during combustion is harnessed for reuse. This way, waste quantities are converted into electricity and steam.

LANDFILL FREE

We are working to reach the landfill-free target by 2025. This target encompasses all Sanofi sites, either premises are rented or leased properties. A site is considered landfill free when less than 1% of the total waste quantity on site is landfilled. Sites in countries where the infrastructures are not available or landfilling is mandatory by law, are excluded from scope. These exceptions must be documented by the sites.

Today we are progressing towards our goals, 72% of the sites were landfill free and only 2% of the total waste quantity was landfilled in 2023.

Our influence on sites that are operated by third parties regarding waste management is limited. For sites that are operated by Sanofi many projects like the example below were executed.

We're diverting **~8,000 tons of egg waste** annually from landfills to compost, reducing the landfill rate by more than **60% and increasing the recycling rate by 65% since 2021**. This allows most egg waste to be composted in 2023



For more information, see in our [Document Center](#):

- *Eco-design factsheet*
- *Climate Change – Road to Net Zero factsheet*
- *Water Stewardship factsheet*
- *Pharmaceuticals in the Environment factsheet*